HOME

Konica

SERVICE MANUAL

Model
FS-107

SECOND EDITION

NOVEMBER 2000

CSM-FS107

KONICA BUSINESS TECHNOLOGIES, INC.

HOME

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FS-107

SERVICE MANUAL

NOVEMBER 2000

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IMPORTANT NOTICE

Because of the possible hazards to an inexperienced person servicing this equipment, as well as the risk of damage to the equipment, Konica Business Technologies strongly recommends that all servicing be performed by Konica-trained service technicians only.

Changes may have been made to this equipment to improve its performance after this service manual was printed. Accordingly, Konica Business Technologies, Inc., makes no representations or warranties, either expressed or implied, that the information contained in this service manual is complete or accurate. It is understood that the user of this manual must assume all risks or personal injury and/or damage to the equipment while servicing the equipment for which this service manual is intended.

Corporate Publications Department

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SAFETY PRECAUTIONS

Installation Environment

Safety considerations usually are directed toward machine design and the possibility of human error. In addition, the environment in which a machine is operated must not be overlooked as a potential safety hazard.

Most electrical equipment is safe when installed in a normal environment. However, if the environment is different from what most people consider to be normal, it is conceivable that the combination of the machine and the room air could present a hazardous combination. This is because heat (such as from fusing units) and electrical arcs (which can occur inside switches) have the ability to ignite flammable substances, including air.

When installing a machine, check to see if there is anything nearby which suggests that a potential hazard might exist. For example, a laboratory might use organic compounds which, when they evaporate, make the room air volatile. Potentially dangerous conditions might be seen or smelled. *The presence of substances such as cleaners, paint thinners, gasoline, alcohol, solvents, explosives, or similar items should be cause for concern.*

If conditions such as these exist, take appropriate action, such as one of the following suggestions.

- Determine that the environment is controlled (such as through the use of an exhaust hood) so that an offending substance or its fumes cannot reach the machine.
- Remove the offending substance.
- Install the machine in a different location.

The specific remedy will vary from site to site, but the principles remain the same. To avoid the risk of injury or damage, be alert for changes in the environment when performing subsequent service on any machine, and take appropriate action.

Unauthorized Modifications

Konica copiers have gained a reputation for being reliable products. This has been attained by a combination of outstanding design and a knowledgeable service force.

The design of the copier is extremely important. It is the design process that determines tolerances and *safety margins* for mechanical, electrical, and electronic aspects. It is not reasonable to expect individuals not involved in product engineering to know what effect may be caused by altering any aspect of the machine's design. Such changes have the potential of degrading product performance and reducing safety margins.

For these reasons, *installation of any modification not specifically authorized by Konica Business Machines U.S.A., Inc., is strictly prohibited.*

The following list of prohibited actions is not all-inclusive, but demonstrates the intent of this policy.

- Using an extension cord or any unauthorized power cord adapter.
- Installing any fuse whose rating and physical size differs from that originally installed.
- Using wire, paper clips, solder, etc., to replace or eliminate any fuse (including temperature fuses).
- Removing (except for replacement) any air filter.
- Defeating the operation of relays by any means (such as wedging paper between contacts).
- Causing the machine to operate in a fashion other than as it was designed.
- Making any change which might have a chance of defeating built-in safety features.
- Using any unspecified replacement parts.

General Safety Guidelines

This copier has been examined in accordance with the laws pertaining to various product safety regulations prior to leaving the manufacturing facility to protect the operators and service personnel from injury. However, as with any operating device, components will break down through the wear-and-tear of everyday use, as will additional safety discrepancies be discovered. For this reason, it is important that the technician periodically performs safety checks on the copier to maintain optimum reliability and safety.

The following checks, not all-inclusive, should be made during each service call:

CAUTION: Avoid injury. Ensure that the copier is disconnected from its power source before continuing.

- Look for sharp edges, burrs, and damage on all external covers and copier frame.
- Inspect all cover hinges for wear (loose or broken).
- Inspect cables for wear, frays, or pinched areas.

- Ensure that the power cord insulation is not damaged (no exposed electrical conductors).
- Ensure that the power cord is properly mounted to the frame by cord clamps.
- Check the continuity from the round lug (GND) of the power cord to the frame of the copier – ensure continuity. An improperly grounded machine can cause an electrically-charged machine frame.

Safeguards During Service Calls

Confirm that all screws, parts, and wiring which are removed during maintenance are installed in their original positions.

- When disconnecting connectors, do not pull the wiring, particularly on AC line wiring and high voltage parts.
- Do not route the power cord where it is likely to be stepped on or crushed.
- Carefully remove all toner and dirt adhering to any electrical units or electrodes.
- After part replacement or repair work, route the wiring in such a way that it does not contact any burrs or sharp edges.
- Do not make any adjustments outside of the specified range.

Applying Isopropyl Alcohol

Care should be exercised when using isopropyl alcohol, due to its flammability. When using alcohol to clean parts, observe the following precautions:

- Remove power from the equipment.
- Use alcohol in small quantities to avoid spillage or puddling. Any spillage should be cleaned up with rags and disposed of properly.
- Be sure that there is adequate ventilation.
- Allow a surface which has been in contact with alcohol to dry for a few minutes to ensure that the alcohol has evaporated completely before applying power or installing covers.

Summary

It is the responsibility of every technician to use professional skills when servicing Konica products. There are no short cuts to high-quality service. Each copier must be thoroughly inspected with respect to safety considerations as part of every routine service call. The operability of the copier, and more importantly, the safety of those who operate or service the copier, are directly dependent upon the conscientious effort of each and every technician.

Remember...when performing service calls, use good judgement (have a watchful eye) to identify safety hazards or potential safety hazards that may be present, and correct these problem areas as they are identified -- the safety of those who operate the copier as well as those who service the copier depend on it!

FS-107 PRODUCT SPECIFICATIONS

Type

Type: Built-in type compact finisher (multiple trays type)

Option: Finisher tray (FT-107) (Up to 2 trays can be installed)

Functions

Type of paper: Same as the main body

Modes: Straight mode

Offset mode (shift)

Staple mode

Paper size

Straight paper exit: 11 x 17, 8.5 x 14R, 8. 5 x 11, 8.5 x 11R, 8.5 x 5.5, 8.5 x 5.5R

Offset: 11 x 17, 8.5 x 14, 8.5 x 11, 8.5 x 11R, 8.5 x 5.5R

1 position staple: 11 x 17, 8.5 x 14, 8.5 x 11, 8.5 x 11R, 8.5 x 5.5R

2 position staple: 11 x 17, 8.5 x 14, 8.5 x 11, 8.5 x 5.5R

Maximum

Paper capacity: 2 trays: 100 +1000 = 1,100 sheets

3 trays: 100 + 100 + 600 = 800 sheets

4 trays: 100 x 4 = 400 sheets

Copy

Paper weight: 13 lb. to 53 lb. papers

Stack capacity: (21 lb. high-quality paper)

With 2 standard trays

		Small size	Medium size	Large size	Special media
Tray 1	Non-staple	100 sheets	100 sheets	100 sheets	10 sheets
	Staple	10 sets	10 sets	10 sets	—
Tray 2	Non-staple	—	1000 sheets	300 sheets	50 sheets
	Staple	—	50 sets	20 sets	—

Note 1: The above figures apply only to if stacked paper is all of the same size.

Note 2: The number of stacked sheets in staple mode must not exceed the stack sheet capacity for non-staple mode.

Note 3: Small size: 8.5x5.5R

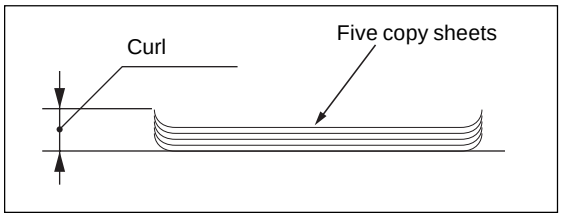
Medium size: Everything other than small size, large size, special media.

Large size: 8.5x14, 11x17

Special paper: Thin paper (16 lb. or less), thick paper (over 34 lb.), blueprint masters, OHP, etc.

Note 4: The stacking capacity of the option conforms to the stacking capacity of tray 1.

Paper curling: Maximum 10mm



Amount of sort off-setting: 30mm

20mm (8.5 x 5.5R)

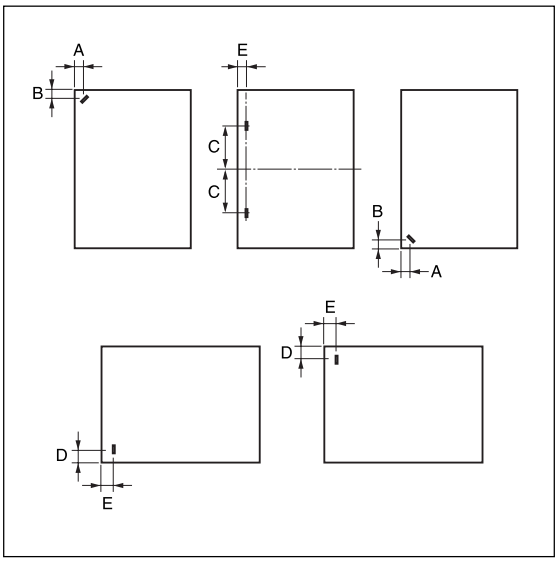
Stapler kit

Staple ability Maximum 50 sheets (with 21 lb. paper, paper thickness less than 5mm)

Stapler capacity: 5,000 staples/cartridge

Staple position: A = 8.6mm ± 3mm
B = 8.6mm ± 3mm
C = refer to following table
D = 10.5mm ± 3mm
E = 8.0mm ± 3mm

Paper Size	C (mm)
A3/A4	60±4
B4/B5	53±4
A4R/A5	90±4
B5R	80±4
A5R	63±4
F4 (8 x 13)	90±4
F4 (8.125 x 13)	91.5±4
F4 (8.25 x 13)	93±4
F4 (8.5 x 13)	95±4
11 x 17/8.5 x 11	52±4
8.5 x 14/8.5 x 11R	95±4
5.5 x 8.5	95±4
5.5 x 8.5R	60±4



Machine data

Power source: DC24V/5V (supplied from the main body)

Maximum power Consumption: Maximum 70VA

Weight: 28.6 lb.

External dimensions: Length 30.8 in.
Depth 19.8 in.
Height 15.4 in.

Maintenance

Maintenance: Same as the main unit

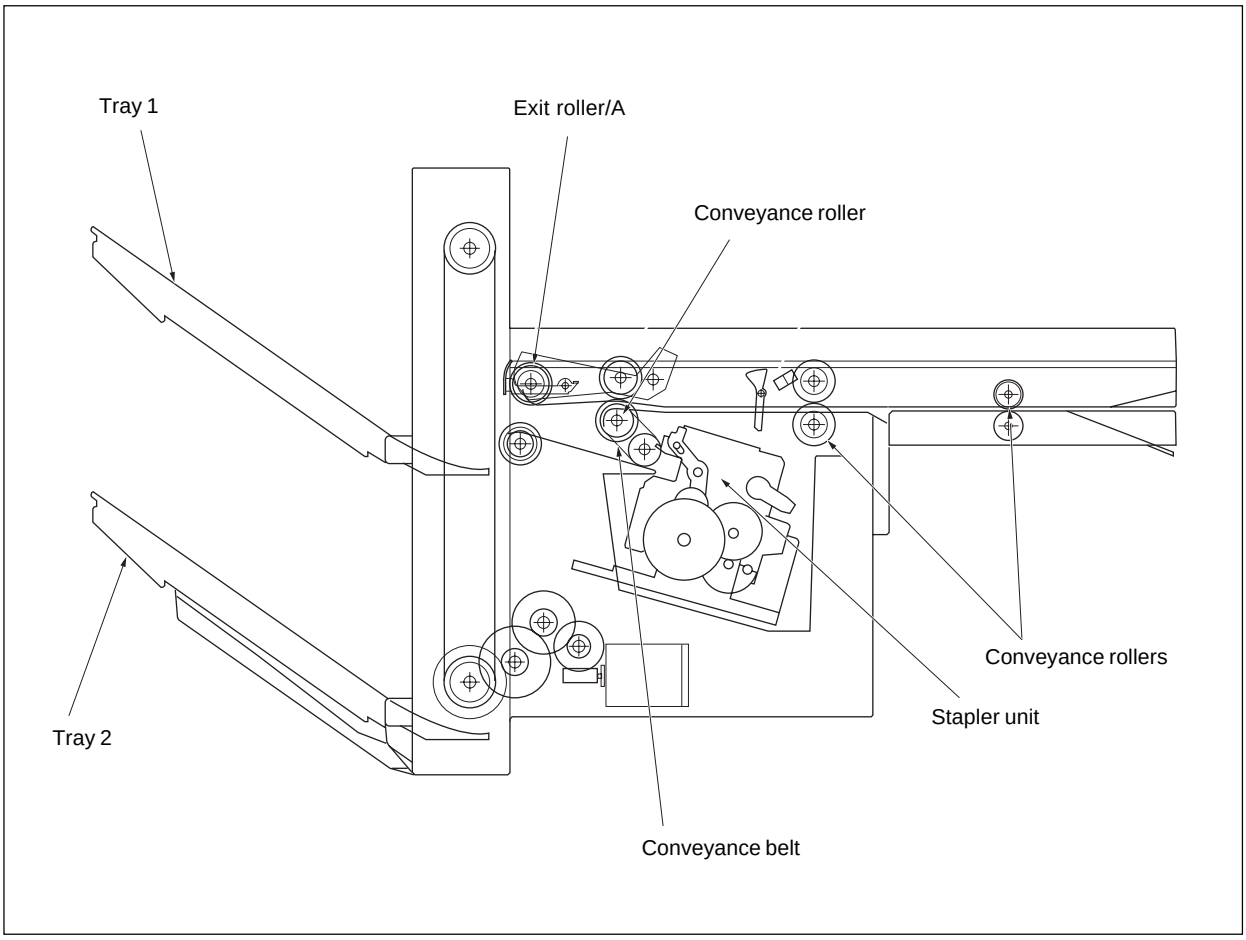
Machine environment

Temperature: 50°to 86°F

Humidity: 10 to 80%RH
(below condensation-forming conditions)

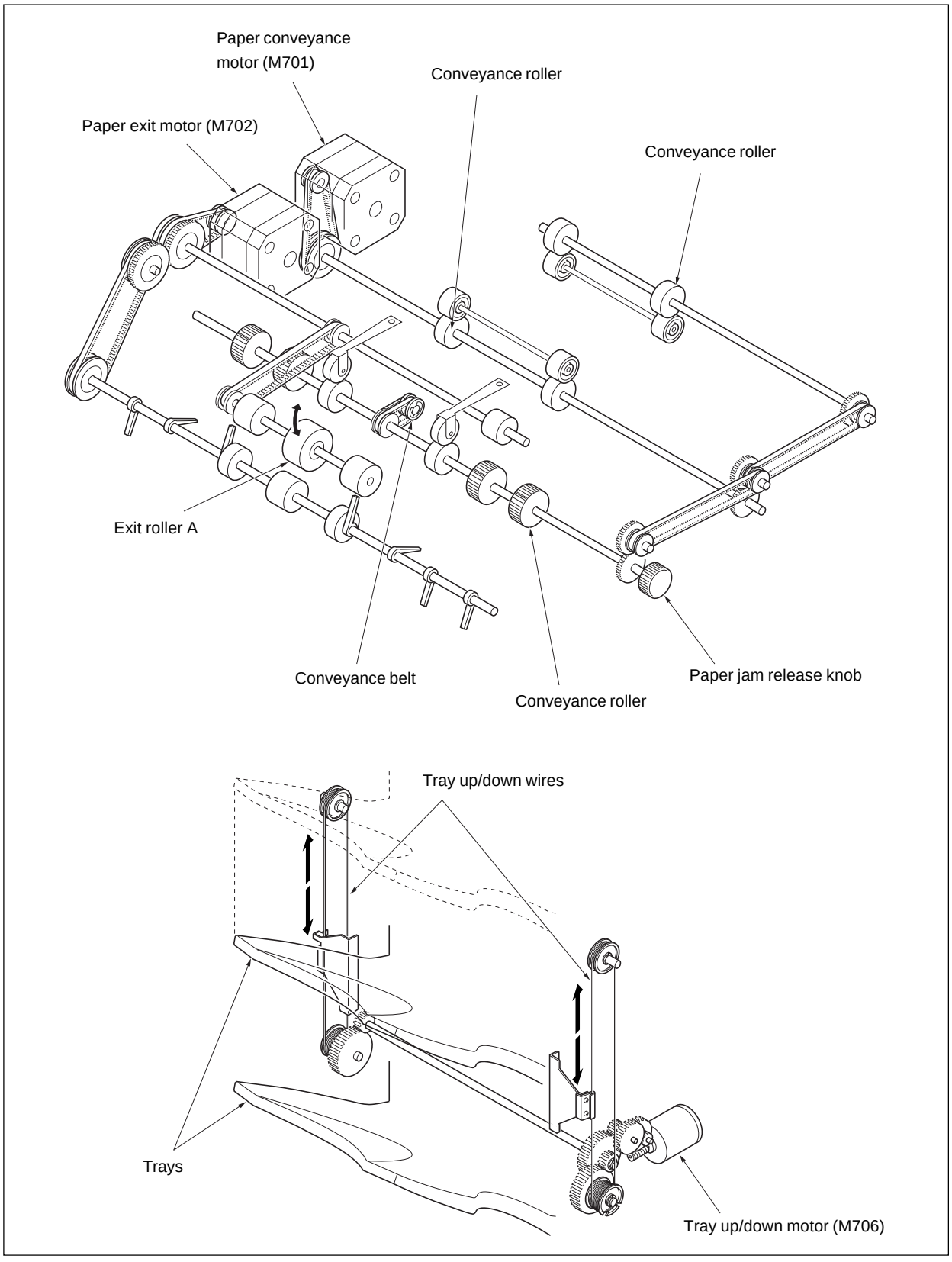
Caution: The contents of this service manual may be changed without notice.

CENTER CROSS SECTION

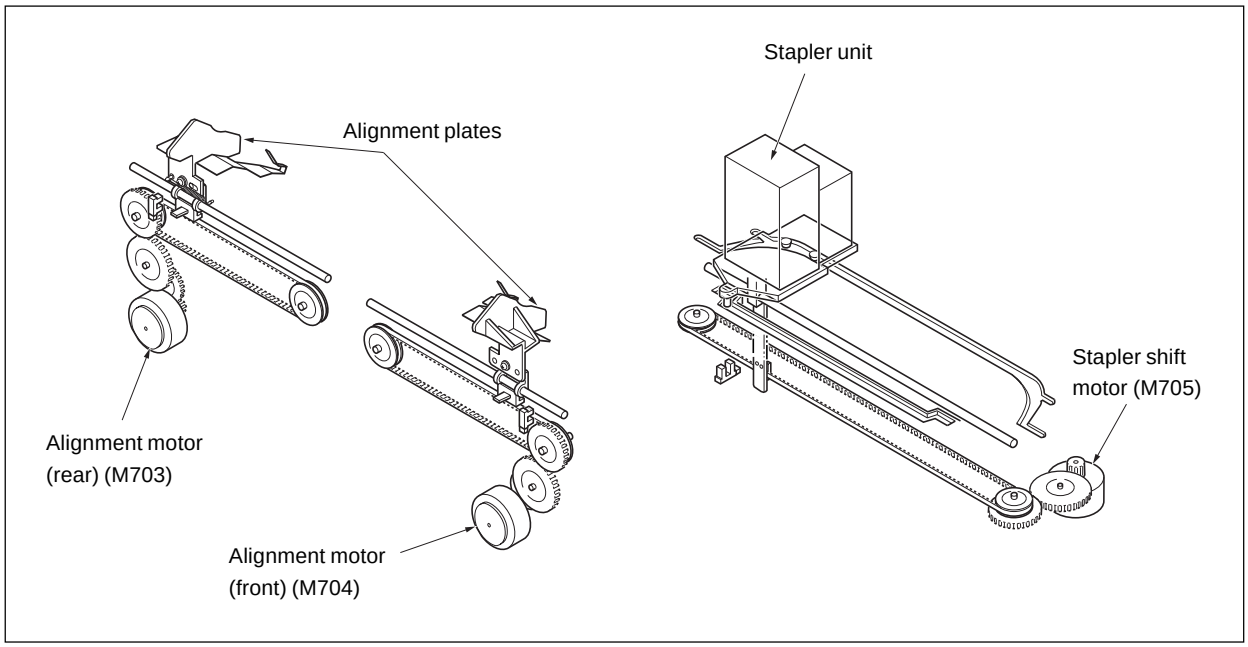


DRIVE SYSTEM DIAGRAM

Paper Conveyance Drive



Stapler Unit Drive

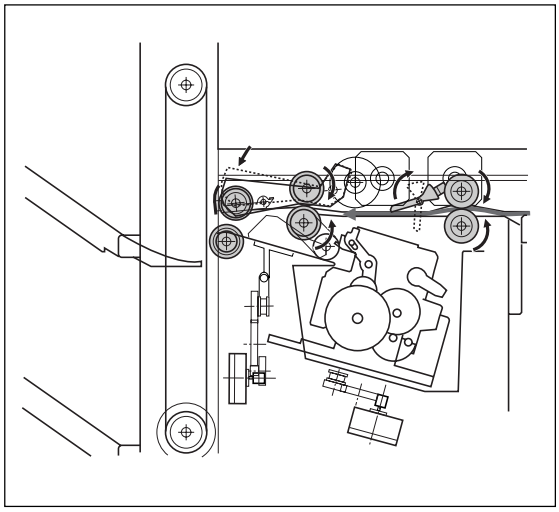


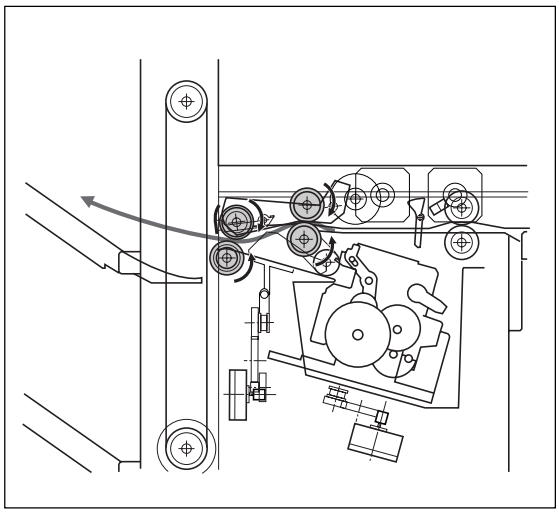
PAPER CONVEYANCE PATH

In the finisher, two different paper conveyance paths are used, changing by the mode selected.

Straight Mode

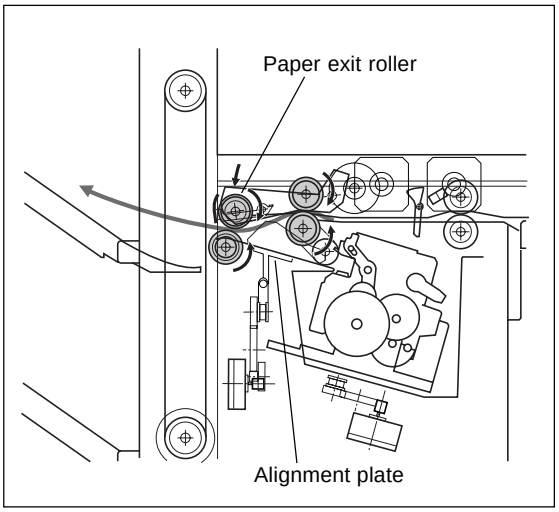
In this mode, paper conveyed to the finisher is exited straight into the tray. (For small size paper, the operation of OffsetMode/Stapling Mode takes place, even in the straight paper exit mode.)

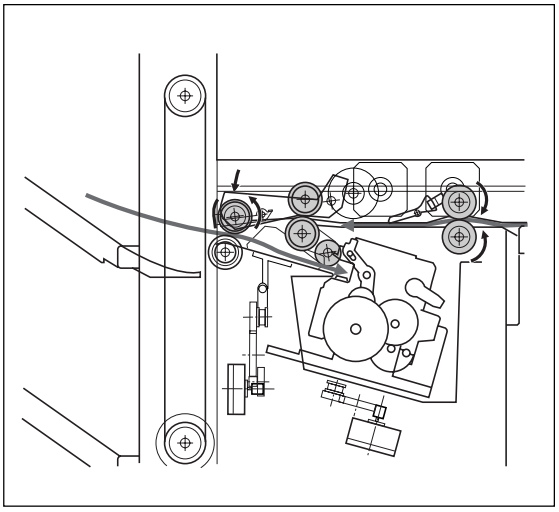


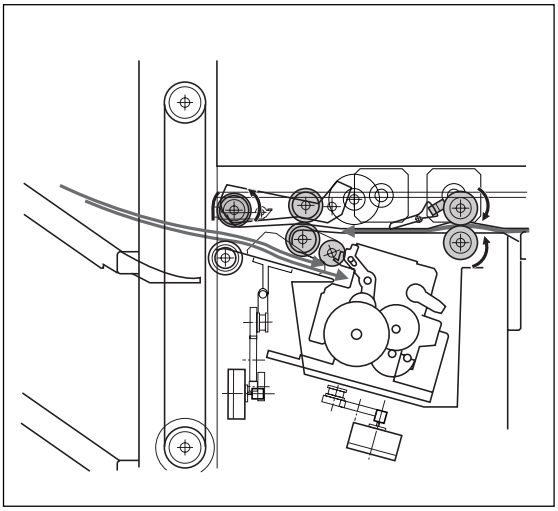


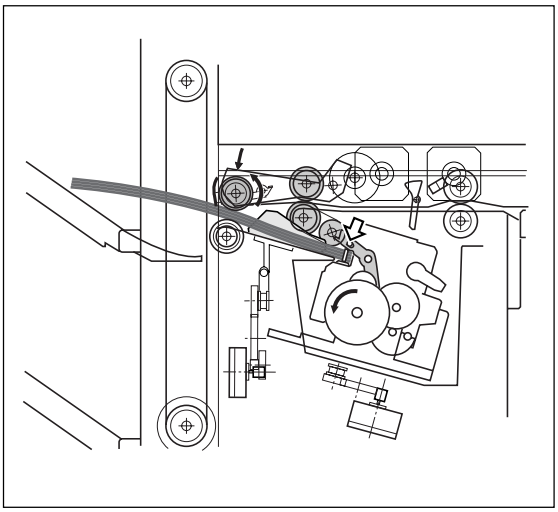
Offset Mode/Staple Mode

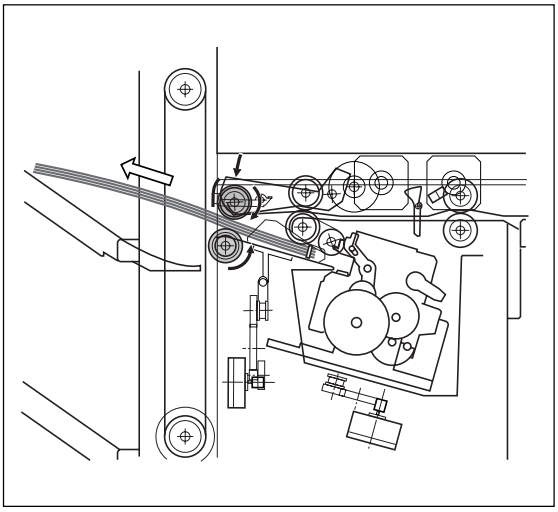
In the offset mode or staple mode, paper conveyed to the finisher is stacked once by the reverse rotation of the exit roller. In the offset mode, this stacked paper is offset by the paper alignment plates. In the staple mode, the paper is stapled. When the respective process is finished, the paper is exited to the tray by the exit roller.











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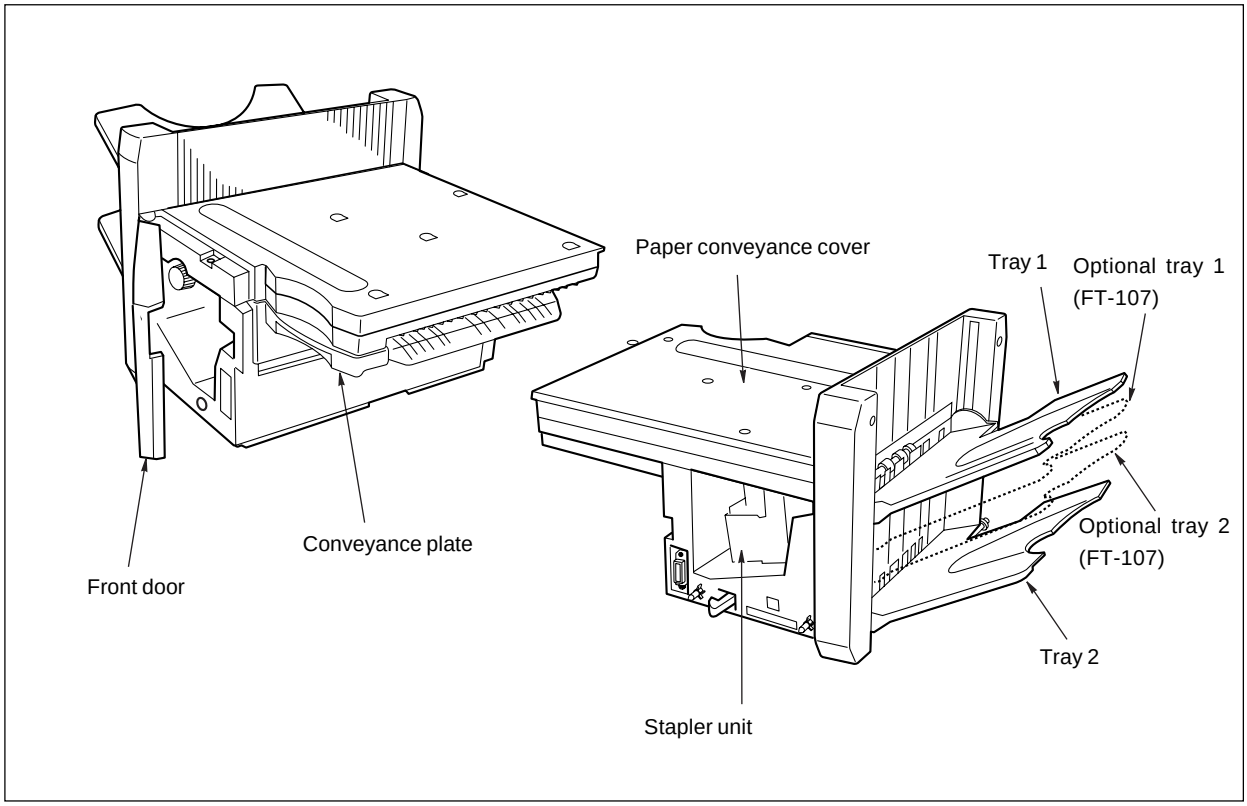
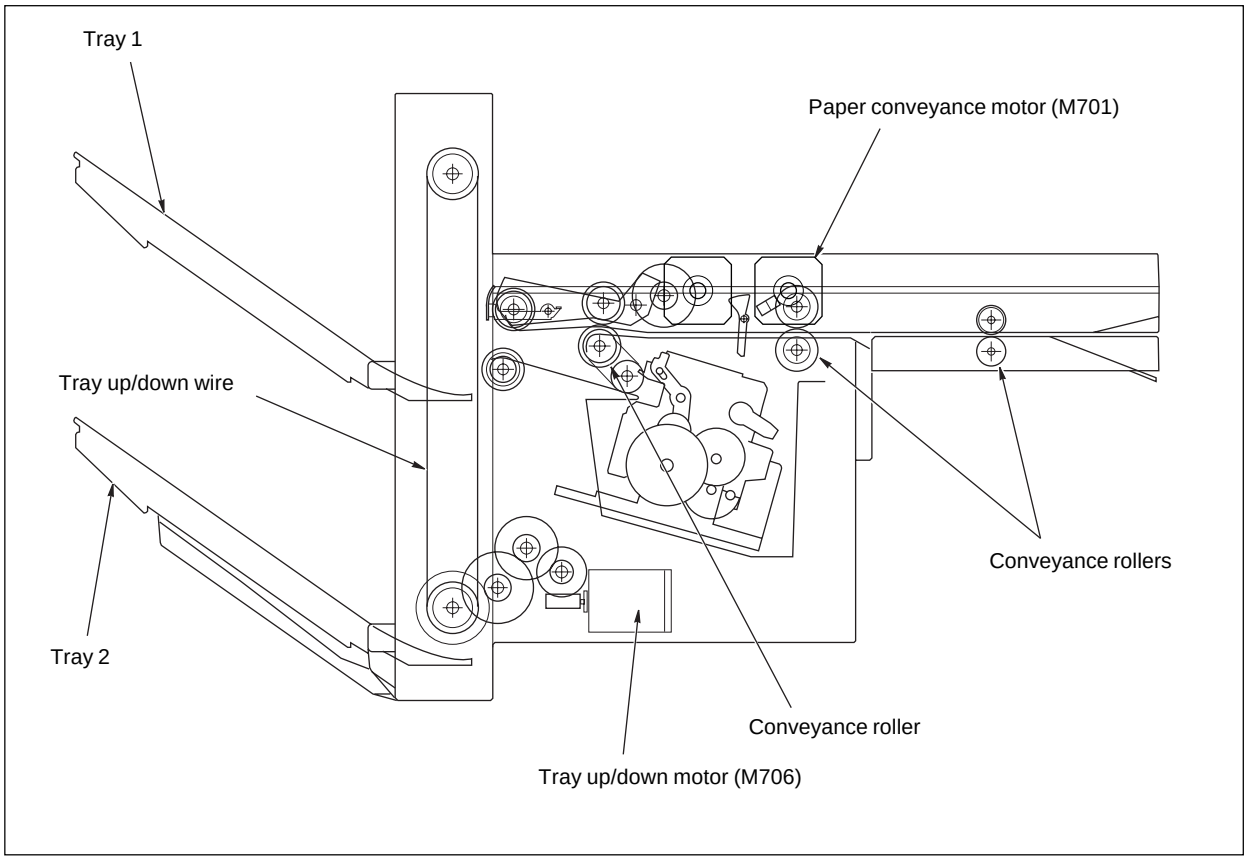
EXTERNAL SECTION

Composition



CONVEYANCE SECTION

Composition



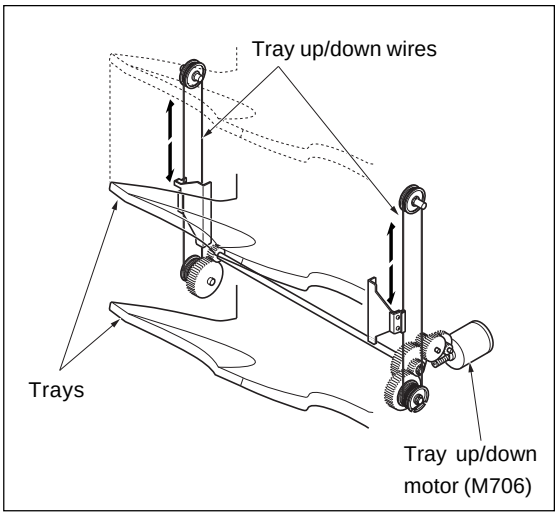
Mechanisms

Mechanism	System
Paper Conveyance	Conveyance rollers
Tray Up/Down *1	Wire drive
Tray Up/Down Accident Prevention *2	Shutter

***1 Tray up/down**

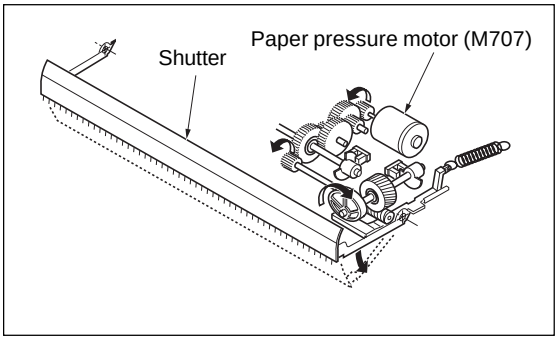
The paper exit gate position is fixed; switching between trays is accomplished by changing the tray position up/down mechanism.

Tray up and down is done by the tray up/down motor (M706), which the tray up/down wires to drive the tray up or down.

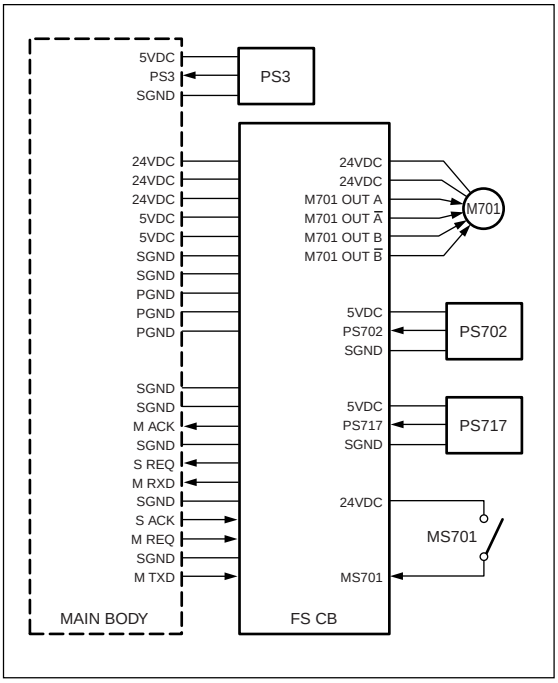


***2 Prevention of tray up/down accident**

To prevent the accident insertion of the hand into the paper exit gate during tray motion up or down, the paper exit gate is equipped with a shutter. The shutter is driven by the reverse motion of the paper pressure motor (M707), closing the paper exit gate when the tray is in motion.



Conveyance Control



Conveyance is accomplished by the drive force of the M701 (paper conveyance motor), which is transmitted to the conveyance rollers. The M701 is linked with the main body, so that rotation is set to low or high speed according to the conveyance movement during copying.
The M701 is controlled by the FS CB (FS control board). Related signals are provided by the PS702 (paper entrance detect PS), PS717 (conveyance cover open/close detect PS) and the MS701 (front door switch) and PS3 (paper exit PS) of the main body.

1. Operation

As paper passes by the PS3 of the main body, the M701 conveys the paper at a low speed in relation with the paper exit velocity of the main body. When the end of the paper passes through the PS3, the M701 then conveys the paper at high speed. The M701 again changes to low speed after the specified period of time when the end of the paper passes through the PS702, ready to convey the next sheet of paper.

2. Signals

a. Input signals

(1) PS3 (PS3 -> PRDB)

When the main body paper exit section detection signal detects paper, [H] is output.

(2) PS702 (PS702 -> FS CB)

Conveyance section paper entrance detection signal

[L]: No paper is present

[H]: Paper is present

(3) PS717 (PS717 -> FS CB)

Conveyance plate opening/closing detection signal

[L]: Conveyance plate open

[H]: Conveyance plate closed

(4) MS701 (MS701 -> FS CB)

Power supply line for each load

When the finisher front door is closed, 24VDC is supplied to each load.

(5) S ACK (MAIN BODY -> FS CB)

Transmission of OK signal from the main body to the finisher.

(6) M TXD (MAIN BODY -> FS CB)

Serial data sign sending the movement condition of the main body to the finisher.

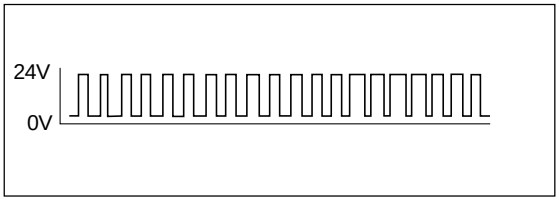
(7) M REQ (MAIN BODY -> FS CB)

Transmission of request signal from the main body to the finisher.

b. Output signals

(1) M701 OUTA, M701 OUTA, M701 OUTB, M701 OUT B (FS CB -> M701)

M701 drive control signal



(2) M ACK (FS CB -> MAIN BODY)

Transmission of OK signal from the finisher to the main body.

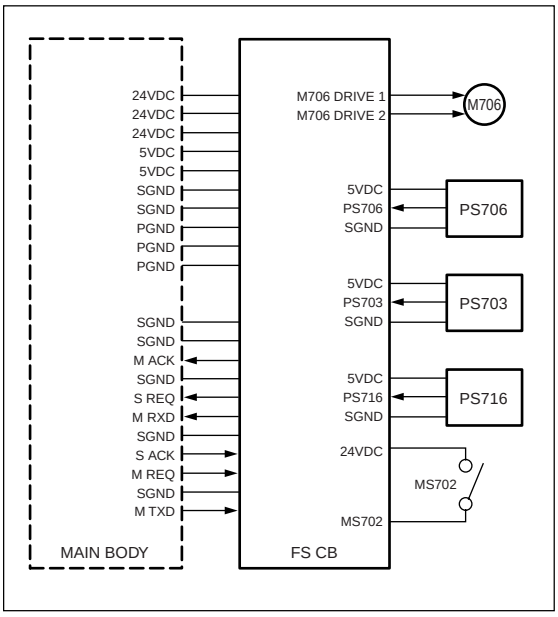
(3) S REQ (FS CB -> MAIN BODY)

Transmission of request signal from the finisher to the main body.

(4) M RXD (FS CB -> MAIN BODY)

Serial data sign sending the movement condition of the finisher to the main body CB.

Tray Up/Down Control



The paper exit position of the FS is fixed, the selected tray is elevated or lowered to the paper exit position. Control of the tray up/down is by the M706 (tray up/down motor) which drives wires which is connected to and moves the trays up and down.
The M706 is controlled by the FS CB (FS control board). Related signals are provided by the PS703 (paper exit detect PS), PS706 (tray lower limit detect PS), PS716 (tray count PS) and the MS702 (shutter switch).

1. Operations

a. Tray lower limit detection operation

With the sub power swich turnd ON, and the PS706 OFF, the M706 is reversed and the tray is lowered until the PS706 is turned ON.

b. Tray count operation

One, two, or no optional trays can be installed.
If PS716 goes OFF after the low limit of the tray has been detected, the machine judges that no optional trays are installed.
When PS716 is ON, optional tray 1 is in place; in this condition the M706 rotates normally, raising the tray one step up until PS716's detection position where motion is stopped. Whether PS716 is ON or OFF at this point determines whether optional tray 2 is in place or not.
The number of trays is counted by means of a series of operations.
After the tray count, the default tray that was set in the key operator mode is set in the exit position.

c. Tray movement operation

If the exit tray has been selected at the LCD, then when copying starts M706 turns ON and moves the selected tray so that it sets into the exit position.
The number of times PS703 switches ON and OFF sets the selected tray into the paper exit position.

d. Shutter switch operation

While the tray is in motion, the shutter, which prevents the fingers or foreign objects from entering the paper exit gate, is closed, with MS702 in the ON position supplying 24VDC to the various loads. While the tray is being raised or lowered the shutter is opened and MS702 is OFF, interrupting the flow of electricity and halting the motion of the FS.

2. Signals

a. Input signals

(1) PS706 (PS706 -> FS CB)

Tray lower limit detection signal

[L]: Not at lower limit

[H]: Lower limit

(2) PS703 (PS703 -> FS CB)

Paper exit detection signal

[L]: Top face

[H]: Not at top face

(3) PS716 (PS716 -> FS CB)

Tray installation detection signal

[L]: No tray

[H]: Tray in position

(4) PS702 (PS702 -> FS CB)

The power supply line for each load.

24VDC is supplied to each load when the shutter is closed.

b. Output signal

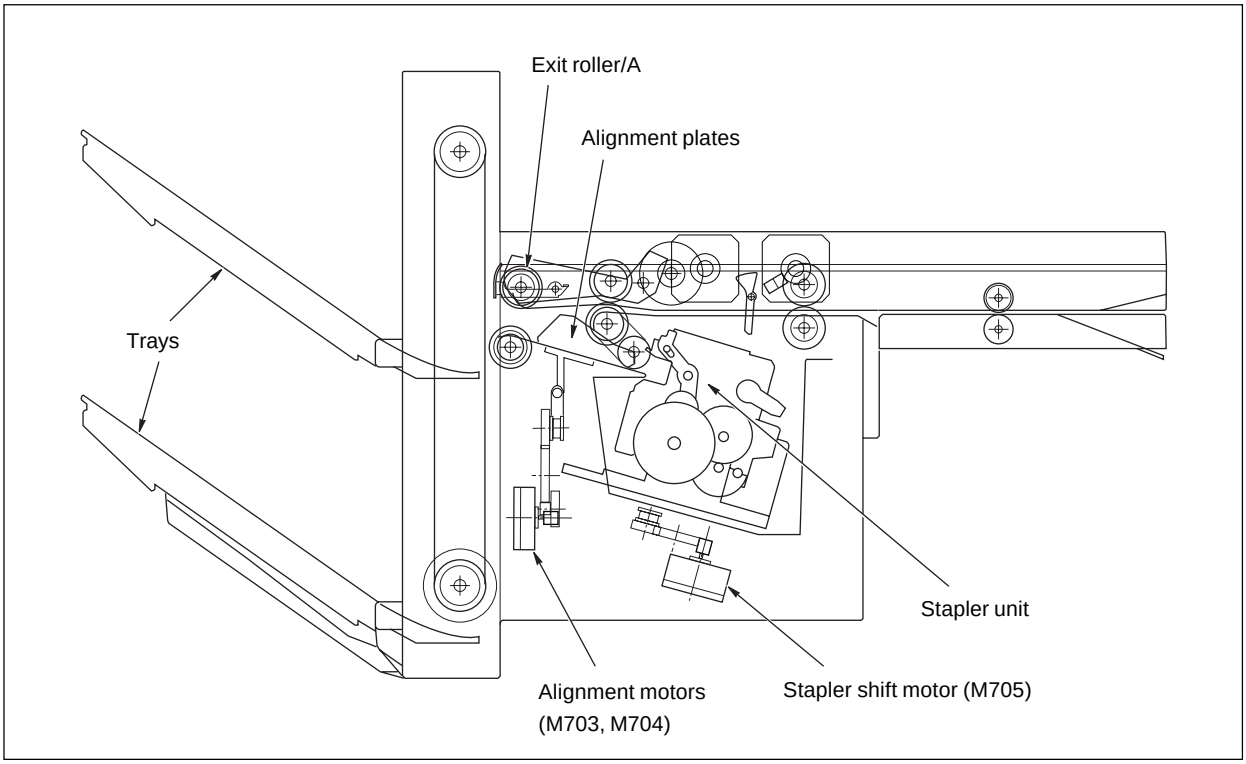
(1) M706 DRIVE 1, 2 (FS CD -> M706)

M706 drive control signal

The drive direction of the M706 is controlled by two signals which change the direction of the electrical current.

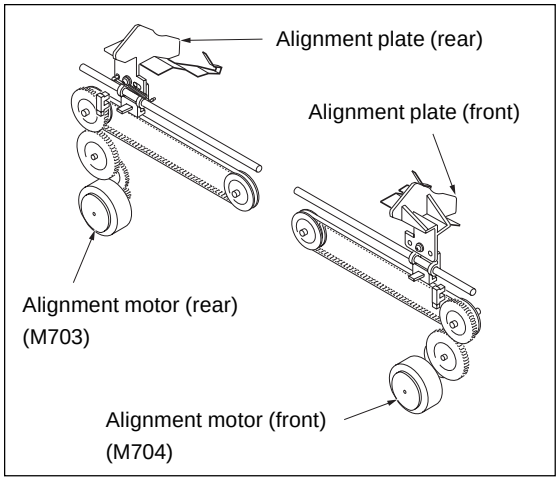
PAPER EXIT/STAPLER UNIT

Composition



Mechanisms

Mechanism	System
Paper Alignment *1	Separate plates for front and rear
Paper Exit *2	Exit roller/A
Paper Stacking *3	Exit roller/A Conveyance belt
Stapler Unit Shift *4	Stapler shift motor

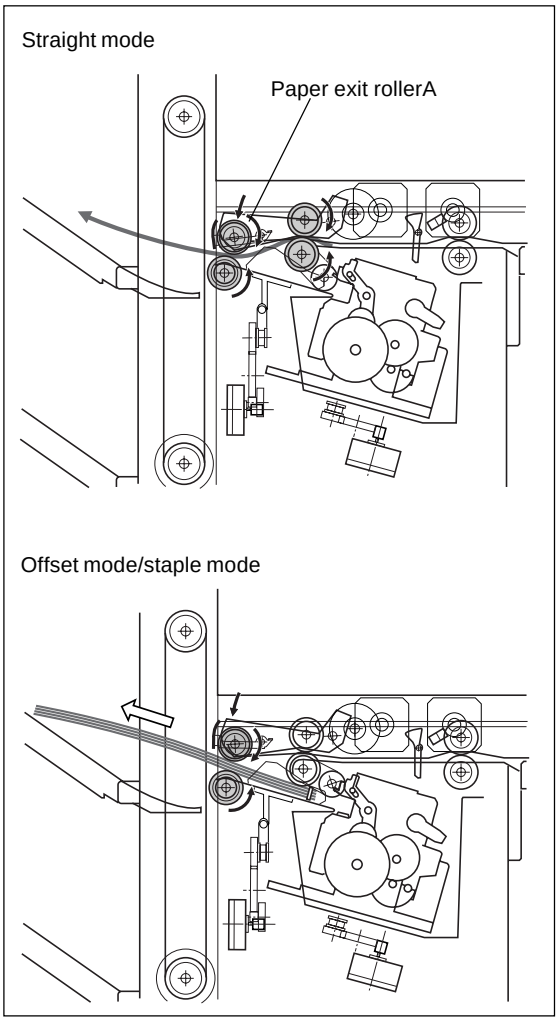


***1 Paper alignment**

Paper conveyed to the paper exit gate by the conveyance roller is stacked by reverse rotation of the paper exit roller/A. The stacked paper is aligned by the alignment plates. Independently-driven alignment plates are set on both the front and rear sides, allowing independent operation at the front and rear during shift mode. The alignment plates are driven by alignment motors M704 (front) and M703 (rear).

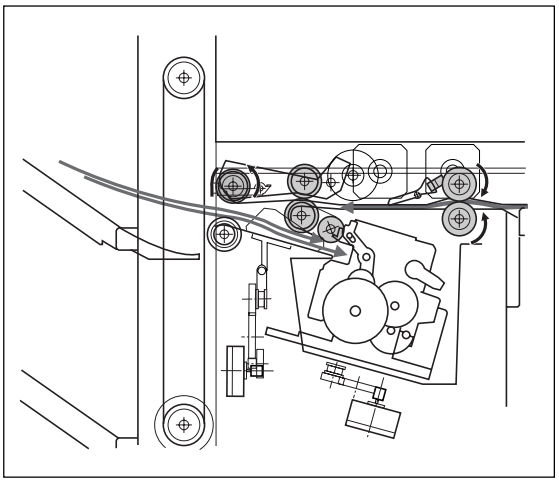
***2 Paper exit**

In the straight mode, paper conveyed to the paper exit gate by the conveyance rollers is conveyed to the tray through paper pressure being applied to paper exit roller/A by the paper pressure motor (M707) and the roller being made to run forward. (Does not apply to small paper sizes.)
In offset mode or staple mode, when the stacked paper is conveyed, paper pressure being applied to paper exit roller/A by the paper pressure motor (M707) and the roller being made to run forward, all the stacked paper is conveyed into the tray.



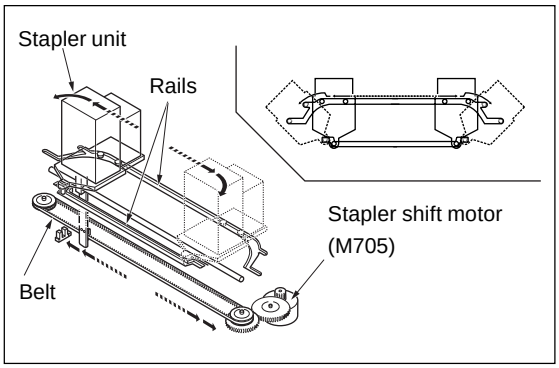
***3 Paper stack**

In the offset mode or staple mode, paper conveyed to the paper exit gate by the conveyance rollers is then conveyed to the stack position by paper exit roller/A running in reverse direction. The conveyed paper is sent to the stopper by the friction of the conveyance belt and stacked.

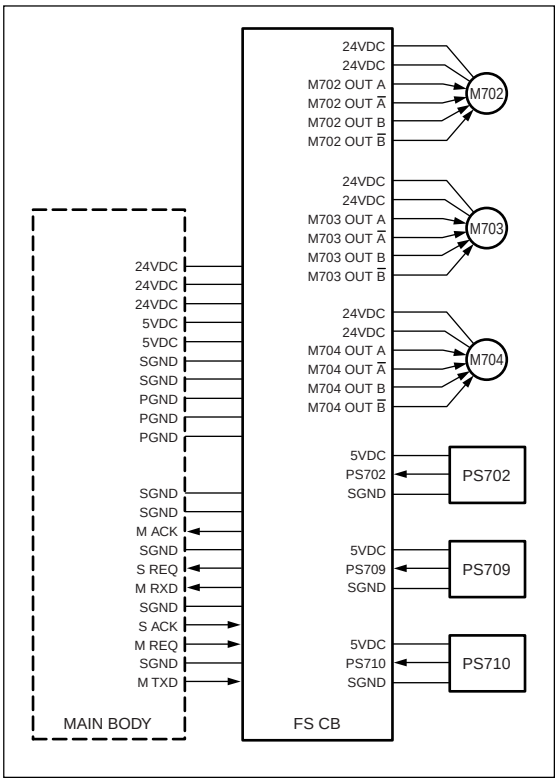


***4 Stapler unit shift**

The stapler unit is driven by the stapler shift motor; the stapler unit is fixed on the staple base and moved by a belt along a rail. Owing to the shape of the rail, when the stapler unit is moved to either the forward or rear positions, the unit rotates and it is possible to staple slantwise. When the stapler is set to staple in two locations, it moves to the first location, puts in the first staple, then moves to the second location to put in the second staple.



Paper Alignment Control



During sorting and stapling, paper exited by the conveyance section is sent to the alignment section by the M702 (paper exit motor) reverse direction, then aligned by the alignment plates driven by the M703 (alignment motor, (rear)) and the M704 (alignment motor, (front)).
The home position of the alignment plates is detected by the PS709 (alignment plate detect PS (rear)) and the PS710 (alignment plate detect PS (front)). The FS CB (FS control board) controls the M702, M703 and M704. The related signal are passed to the PS702 (paper entrance detect PS).

1. Operations

a. Normal alignment operation

The front and rear alignment plates work in symmetry to the front and rear based on the center of the alignment section, alternately aligning and releasing. To create this symmetrical movement the M703 and M704 always rotate in opposite directions.
Every five sheets of the conveyed paper are aligned and sent on to the paper exit section.
The timing of the M703 and M704 are set to the starting point by the ON/OFF of the PS702 (paper entrance detect PS).

b. Offset (shift alignment) operation

The sheets corresponding to odd sets of copies are fed to the paper exit unit as soon as they have been aligned normally. (Up to 5 sheets are stacked and exited.)
During the alignment operation for even sets of copies, M703 and M704 rotate in the same direction, shifting the sheets forward from the center. The aligned sheets are then sent to the paper exit unit. (Up to 5 sheets are stacked and exited.

c. Staple mode operation

In the staple mode, the M703 and M704 are released after the stapling action is completed.
The ON/OFF timing of the M703 and M704 is set as the M702 is turned from OFF to ON, and the PS702 is turned OFF after the specified period of time.

2. Signals

a. Input signals

(1) PS709 (PS709 -> FS CB)

Detection signal of the home position of the alignment plate (rear)

[L]: Non-home position

[H]: Home position

(2) PS710 (PS710 -> FS CB)

Detection signal of the home position of the alignment plate (front)

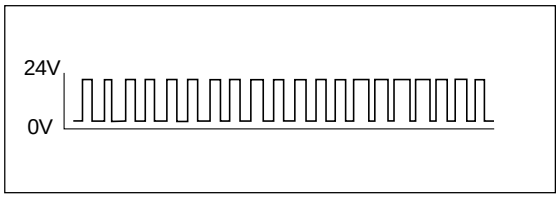
[L]: Non-home position

[H]: Home position

b. Output signals

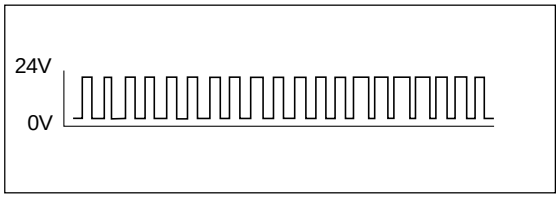
(1) M702 OUT A, M702 OUT $\overline{A}$, M702 OUT B, M702 OUT $\overline{B}$ (FS CB -> M702)

Drive control signal for M702



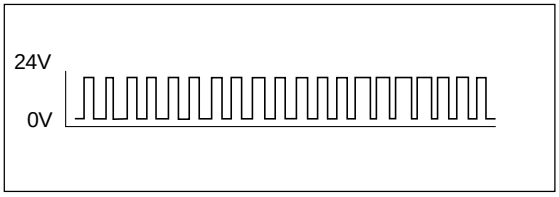
(2) M703 OUT A, M703 OUT $\overline{A}$, M703 OUT B, M703 OUT $\overline{B}$ (FS CB -> M703)

Drive control signal for M703

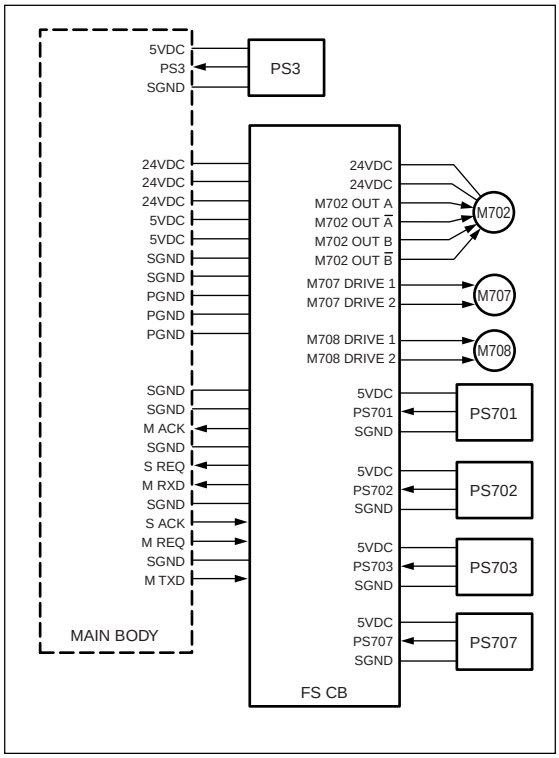


(3) M704 OUT A, M704 OUT $\overline{A}$, M704 OUT B, M704 OUT $\overline{B}$ (FS CB -> M704)

Drive control signal for M704



Paper Exit Control



Papers that have already been aligned or stapled are exited by the paper exit roller.

A mechanical clutch is connected to M702 (paper exit motor). A mechanical clutch can convey the forward direction driving power to the exit roller with certain movement.

The M702 is responsible for speed control for connection with the mechanical clutch, for sending the alignment section at the reversal rotation, and also during the usual paper exit.

The M702 is controlled by the FS CB (FS control board).

The related signals are M707 (paper pressure motor), M708 (stapler motor), PS701 (paper pressure PS), PS702 (paper entrance detect PS), PS703 (paper exit detect PS), and PS707 (no paper detect PS).

1. Operation

During paper exit, both upper and lower exit rollers are compressed as a consequence of the operation performed by M707, and that condition is detected by the ON/OFF state of PS701.

a. Non-staple mode operation

The ON/OFF timing of M702 is such that it turns ON during the OFF of PS3, and turns OFF during the OFF of PS702.

After the paper exit tray goes up until PS703 turns ON, M706 moves the tray up and down in order to keep the ON state of PS703 during paper exit.

b. Staple mode operation

M702 turns ON a certain time after M708 finishes the stapling operation and turns OFF.

The subsequent operations are the same as for the non-staple operation.

2. Signals

a. Input signal

(1) PS701 (PS701 -> FS CB)

Pressure detection signal of the exit paper compressing plate

[L]: Pressure

[H]: Release

b. Output signals

(1) M707 DRIVE 1,2 (FS CB -> M707)

M707 drive control signal

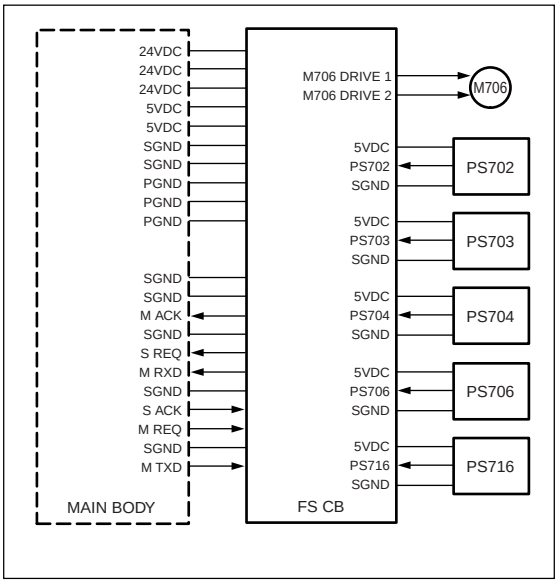
The drive direction of the M707 is controlled by two signals which change the direction of the electrical current.

(2) M708 DRIVE 1,2 (FS CB -> M708)

M708 drive control signal

The drive direction of the M708 is controlled by two signals which change the direction of the electrical current.

Paper Stack Control



When the stack of the papers on the paper exit tray is full, a message is put up on the LCD.

During the automatic switching mode of the tray, a message is not put up on the LCD. The tray located 1 step below is brought to the paper exit position by a vertical movement of M706 (tray up/down motor).

The M706 is controlled by FS CB (FS control board).

The related signals are PS702 (paper entrance detect PS), PS703 (paper exit detect PS), PS704 (tray full-stack detect PS), PS706 (tray lower limit detect PS), and PS716 (tray count PS).

The automatic switching mode of the tray can be controlled using the 25 modes of the main unit.

1. Operation

a. Up/down operation

When the tip of the paper turns PS702 ON, the tray is driven down by a certain amount. After the rear of the paper turns PS702 OFF, M706 turns ON driving the tray up until PS703 is turned ON.

b. Full-stack detection operation

When a tray other than tray 1 is selected and PS703 is turned ON when PS704 is ON, the paper-full condition is detected. When tray 1 is selected and PS 703 is turned ON when PS706 is ON, the paper-full condition is detected.

c. Automatic tray switching operation

When tray 1, optional tray 1, and optional tray 2 are selected and the paper-full condition is detected, M706 drives the tray up so that PS703 is turned OFF and then ON again, and the immediately lower tray is set at the paper exit position.

When tray 2 is selected and the paper-full condition is detected, M706 drives the tray down until PS716 is turned ON, and then up until PS703 is turned ON, set tray 1 at the paper exit position.

2. Signal

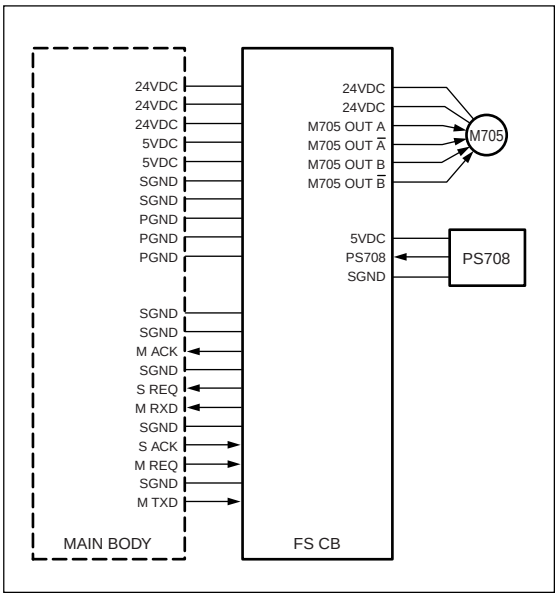
a. Input signal

(1) PS704 (PS704 -> FS CB)

Paper-full detection signal

Goes [H] when paper-full condition is detected.

Stapler Control



M705 (staple shift motor) performs staple displacement control by moving the stapler unit up to the stapler operation position.

The home position of the stapler unit is detected by PS708 (stapler unit HP detect PS).

M705 is controlled by FS CB (FS control board).

1. Operation

The stapler unit is usually at the home position of the finisher.

When receiving a command signal from the main unit, M705 moves the stapler unit to the stapling position according to paper size and starts the stapling operation.

After finishing the copy, M705 moves the stapler unit to its home position.

The M705 OFF timing is controlled by the number of driving steps after PS708 is turned OFF.

2. Signal

a. Input signal

(1) PS708 (PS708 -> FS CB)

Detection signal of the home position of the stapler unit

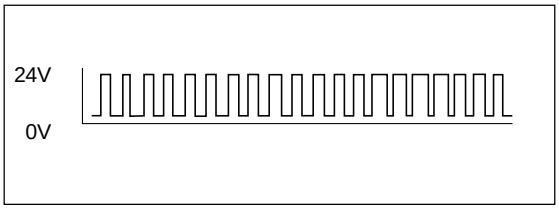
[L]: Non-home position

[H]: Home Position

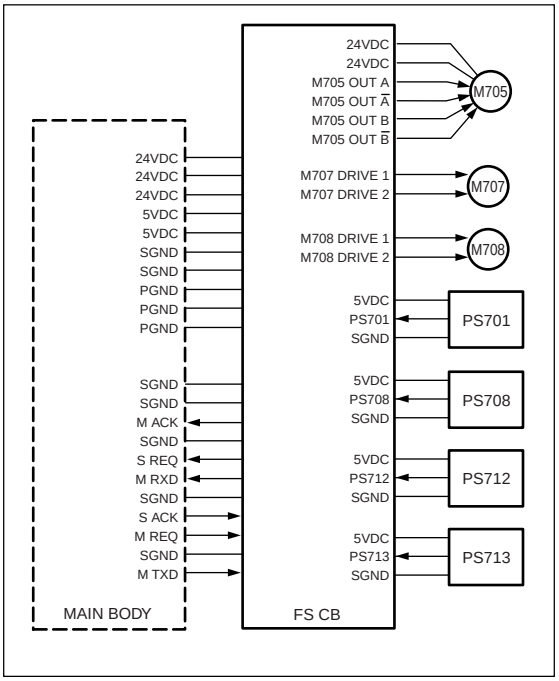
b. Output signal

(1) M705 OUT A, M705 OUT $\overline{A}$, M705 OUT B, M705 OUT $\overline{B}$ (FS CB -> M705)

Drive control signal for M705



Staple Control



In staple mode, stapling is performed using the driving force of the M708 (stapler motor).

M708 is controlled by FS CB (FS control board).

The related signals are M705 (stapler shift motor), M707 (paper pressure motor), PS701 (paper pressure PS), PS708 (stapler unit HP detect PS), PS712 (stapler HP detect PS), PS713 (no-staple PS), and PS714 (stapler ready PS).

The maximum number of sheets that can be stapled, and the operation when stapling is not possible, can be chosen in the 25 mode of the main body.

1. Operation

a. Stapler operation

After the aligning operation of the last paper, M707 is turned ON and compresses the paper using the exit rollers. Then, M708 is turned ON and stapling begins.

When PS701 is turned OFF, M707 is turned OFF, PS712 is turned ON, and M708 is turned OFF.

For continuous stapling, M705 is not turned ON, and the stapler unit waits for the next stapling at the same position.

In the case of 2 stapling positions, the first staple is executed and then M705 moves the stapler to the specified position for the second staple. M708 then turns ON and executes the second staple. At this moment, if continuous stapling has been selected, the stapler unit stops at the immediately previous stapling position. When the first stapling operation of the next paper is done, M705 moves the stapler unit for the second stapling operation.

After the copy is finished, the stapler unit returns to its home position.

b. No-staple detection control

The PS713 is equipped to detect the no-staple condition of the stapler unit. When the staple is not present, the LCD (display board) of the main unit shows a message indicating the no-staple condition.

c. Stapler Initial Operation

After replacing the stapler cartridge, M708 is driven until staples are detected in the PS714, performing up to a maximum of 16 blank stapling operations, then the staples are positioned just in front of the stapling position.

2. Signals

a. Input signals

(1) PS712 (PS712 -> FS CB)

M708 home position detection signal

[L]: Home position

[H]: Non-home position

(2) PS713 (PS713 -> FS CB)

No-staple detection signal of the stapler unit

[L]: With staple

[H]: No staple

(3) PS714 (PS714 -> FS CB)

Detects whether staple is in position for stapling by stapler unit (whether staple is present at point just ahead of where it is actually driven from the stapler).

[L]: With staple

[H]: No staple

OTHER CONTROLS

Movement With Power On

When the power is turned ON, the finisher performs the following initialization operations.

1. M707 turns ON and the paper exit gate pressure is released.
2. PS708 (stapler unit HP detect PS) detects whether the stapler unit is on stand-by in home position.
3. M703 (alignment motor (rear)) and M704 (alignment motor (front)) turn ON and perform a home position search for the alignment plates (front and rear).
4. The paper exit gate shutter closes and the tray count operation takes place.

Opening and Closing Motion of the Front Door

1. In case PS707 is ON, it makes M702 go through a normal rotation and performs a paper exit operation.
2. M707 turns ON and the paper exit gate pressure is released.
3. PS708 (stapler unit HP detect PS) detects whether the stapler unit is on stand-by in home position.
4. M703 (alignment motor (rear)) and M704 (alignment motor (front)) turn on and perform a home position search for the alignment plates (front and rear).

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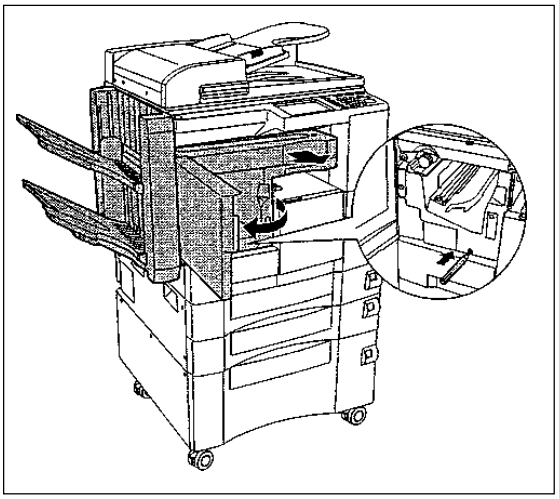
DISASSEMBLY AND ASSEMBLY

⚠**Caution: Make sure the power plug is uplugged.**

Removal and Reinstalling of the Finisher

(1) Open the front door, then insert a pen, or the like, into the hole at the bottom of the finisher

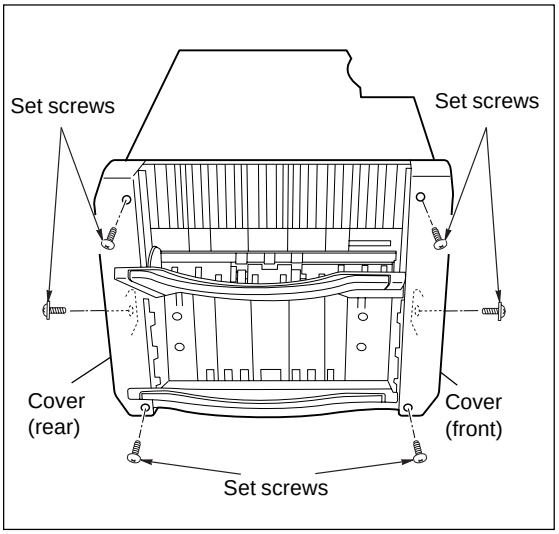
Caution: There is a risk of the internal lever becoming deformed, so do not push it in hard.



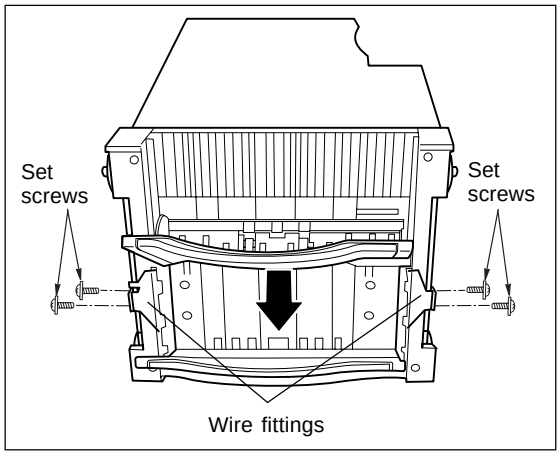
(2) Pull the finisher forward and remove it.

Removal and Reinstalling of the Tray

(1) Take out each 3 sets of set screws and remove the cover's front and rear.



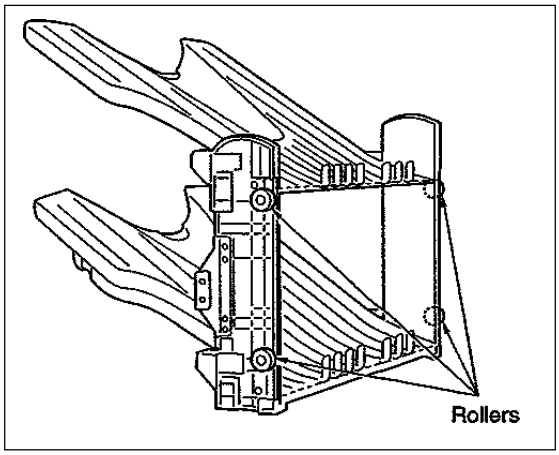
(2) Take out each 2 sets of set screws from the wire fittings on front and rear.



(3) Pull out the tray downward from the frame that it is installed.

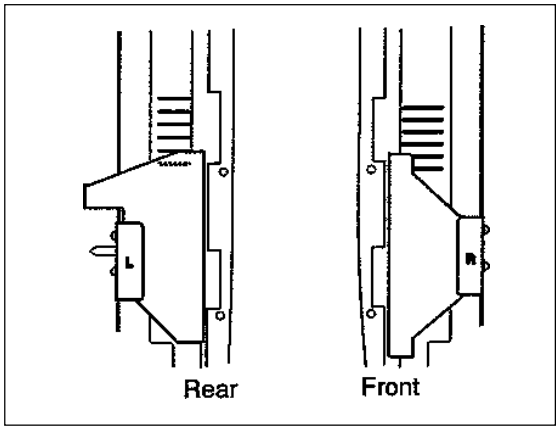
Caution 1: Taking out the set screws from the fixed fittings will make the tray frame fall out.

Caution 2: Take care not to drop the rollers installed on the tray.



(4) Install by reversing the removal procedure.

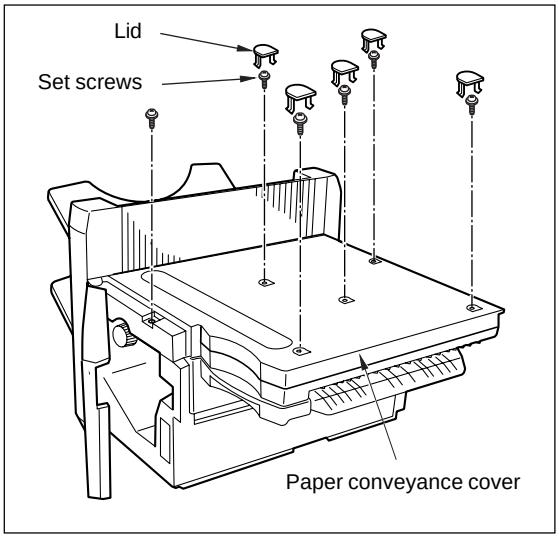
Caution: In case of fixing the tray frame to the fixed fittings, make sure that the set screws are fastened so that the tray is horizontal. (Use the 6 marks at each of the front and rear as guides for horizontal adjustment.)



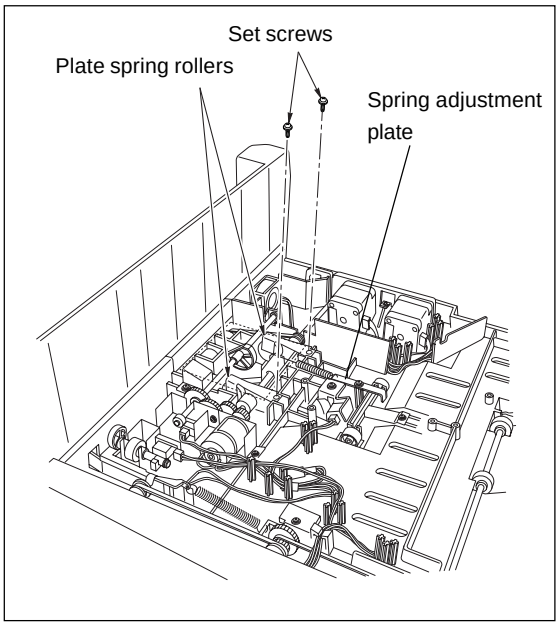
Replacing the Paper Exit Roller/A

(1) Remove the finisher from the main body.

(2) Take off 5 lids and 6 set screws and remove the paper conveyance cover.

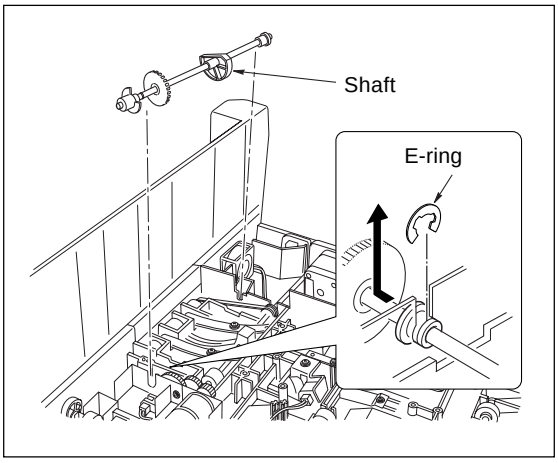


(3) Take out each of the single springs and set screws and remove the plate spring roller.

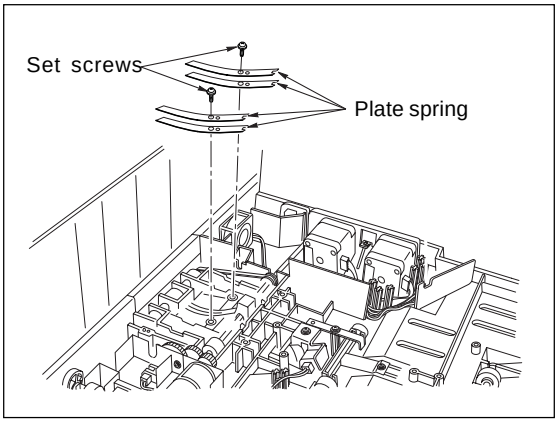


Caution: Do not remove the screws for the spring adjustment plate.

(4) Remove the E-ring and remove the cam shaft.



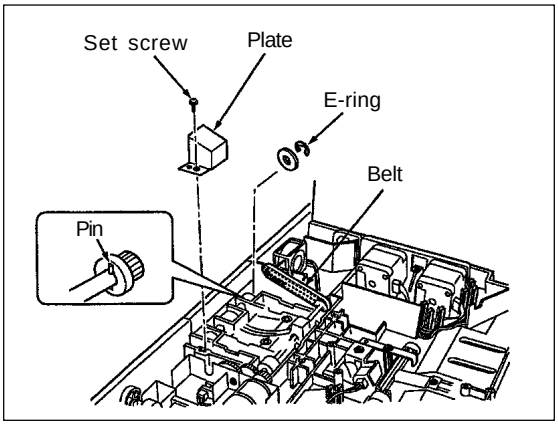
(5) Take out the 2 sets of set screws and remove the set of 2 plate springs.



(6) Take out 1 set screw and remove the plate.

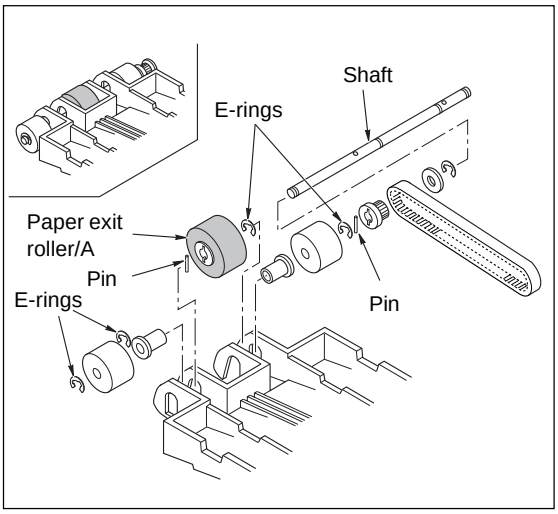
(7) Remove the E-ring that affixes the belt gear, slide the gear and remove the belt.

Caution: Be careful to not drop the pin inside the gear.



(8) Remove the 5 E-rings and pull out the shaft from the paper exit roller/A.

Caution: Be careful to not drop the pin inside the paper exit roller/A.



(9) Replace the paper exit roller/A.

(10) Install by reversing the removal procedure.

Removing/Reinstalling the Up/Down Wire

(1) Take out the 3 sets of set screws and remove the front cover and rear cover.

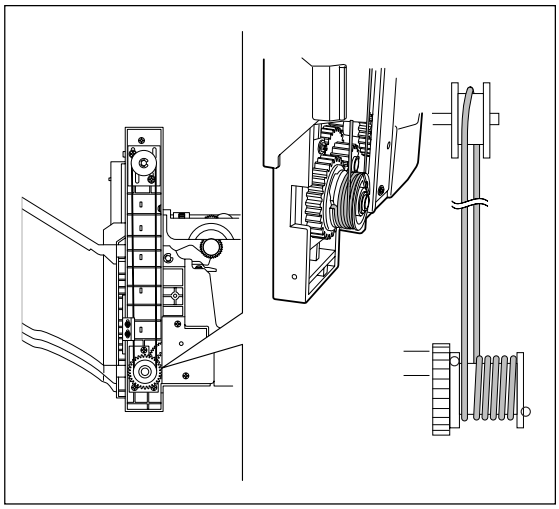
(2) Remove the 2 set screws from each of the front and rear wires and then remove the tray unit.

Caution: Perform the removal/installating of the front up/down wire before performing the removal/installating of the rear up/down wire.

(3) Loosen the 2 set screws and release the pulley tension plate in front from its fixed position.

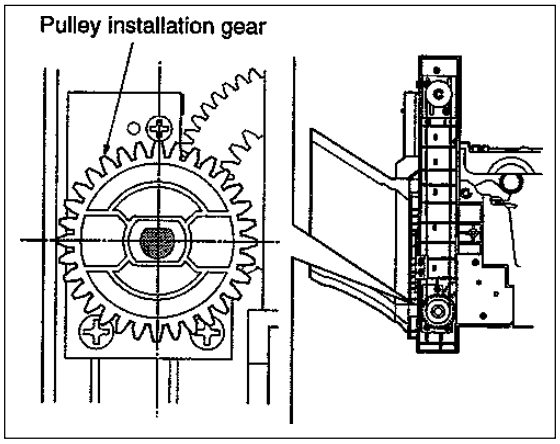
(4) Remove the E-ring of the lower pulley (in front).

(5) Remove the lower pulley (in front) and remove the up/down wire in front.



(6) Attach the metallic ball of the up/down wire on the inner surface of the lower pulley (in front), and insert into the shaft. The metallic ball to be set is the one longer from the wire fitting.

Also, check to see if the gear position at which the pulley is installed is in line with the opposite side.



Caution: Ensure that the pulley installation gear is horizontal with respect to the casing.

(7) Wind the up/down wire once around the lower pulley front) counter-clockwise, and string it to the upper pulley (front).

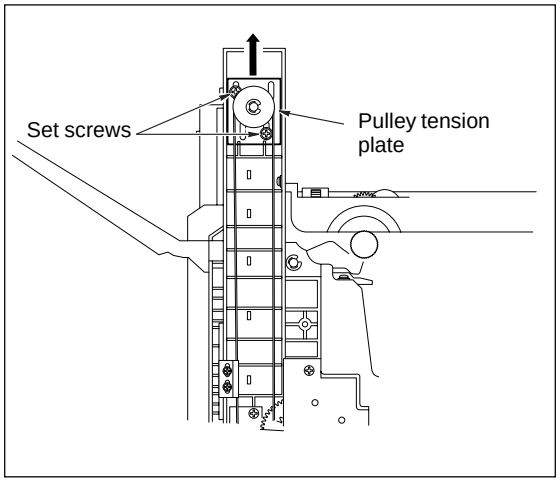
(8) Down the up/down wire strung to the upper pulley (front) to the lower pulley and wind it around 4 times counter-clockwise, and attach the metallic ball on the end to the side of the lower pulley (front).

(9) Attach the E-ring and affix the lower pulley (front).

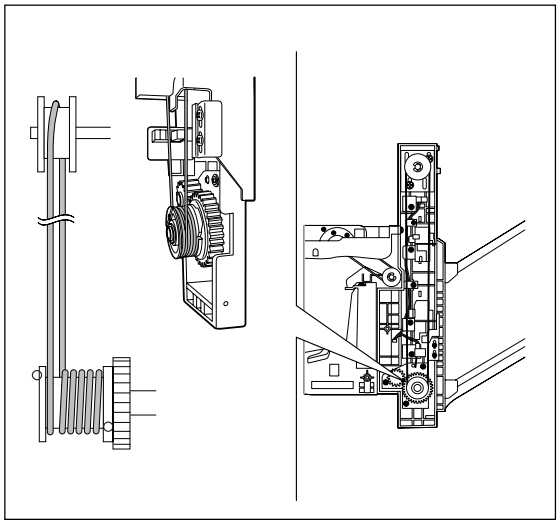
(10) Fasten the 2 set screws while pulling up the pulley tension plate (front), applying 3kg tension.

Caution: Apply the required amount of tension at the time of affixing the pulley tension plate by using such devises as a tension gauge.

Required value: 3kg



(11) Refer to procedures 3 to 6 and remove the up/down wire on the rear.



(12) Wind the up/down wire once around the lower pulley (rear) in the clockwise, and string it to the upper pulley (rear).

(13) Down the up/down wire strung to the upper pulley (rear) to the lower pulley and wind it around 4 times clockwise, and attach the metallic ball on the end to the side of the lower pulley (rear).

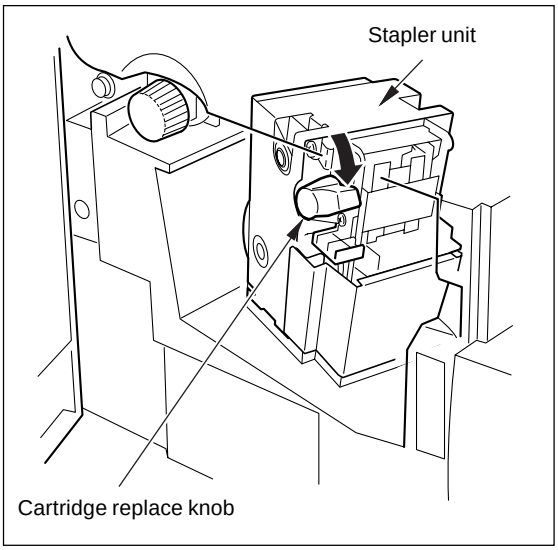
(14) Attach the E-ring and affix the lower pulley (rear).

(15) Fasten the 2 set screws while pulling up the pulley tension plate (rear), applying 3kg tension.

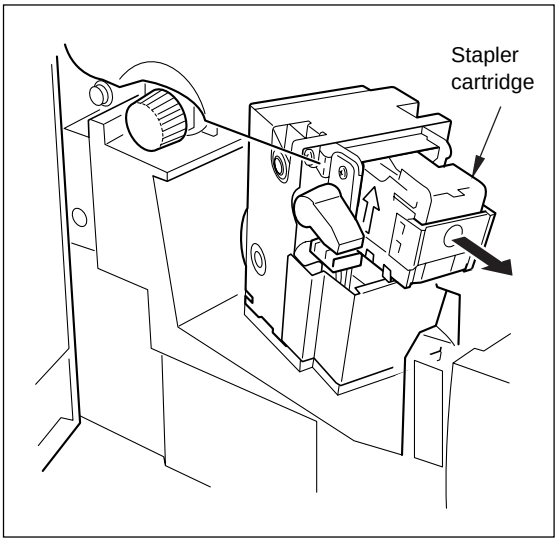
Replacing the Stapler Cartridge

(1) Operate the stapler cartridge replacing from the operation panel. The stapler unit will move and position itself to the front.

(2) Turn the stapler cartridge replace knob on the stapler unit.



(3) Remove the old cartridge and push a new cartridge firmly in place.

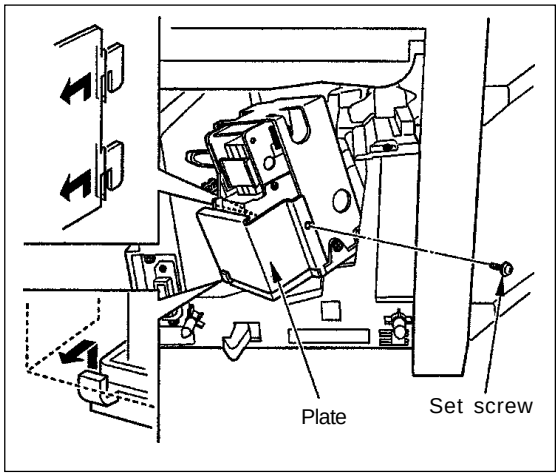


Removing/Reinstalling the Stapler Unit

(1) Remove the finisher from the main unit.

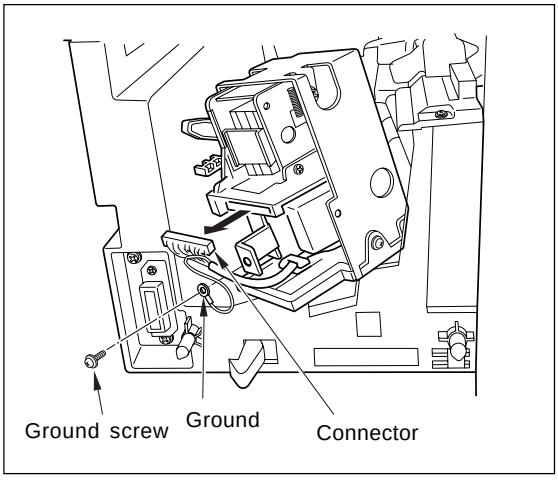
(2) Take out the fixing plates of the plate affixing the stapler unit, from the rear of the finisher unit.

(3) Slide the plate and remove.

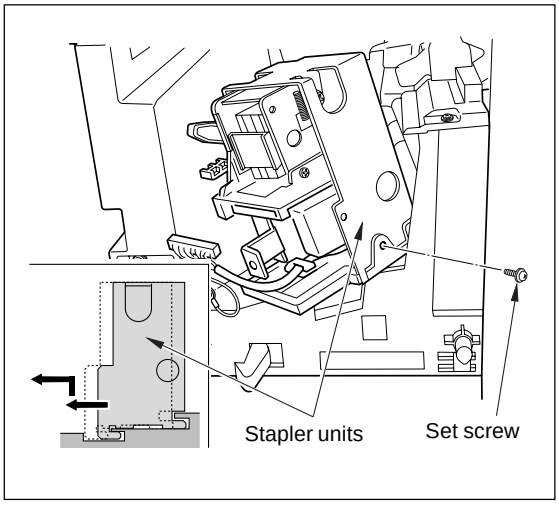


Caution: When reinstalling the plate, be sure to insert the plate into the insides of the hooks.

(4) Take out the connector and 1 grounding screw from the stapler unit.

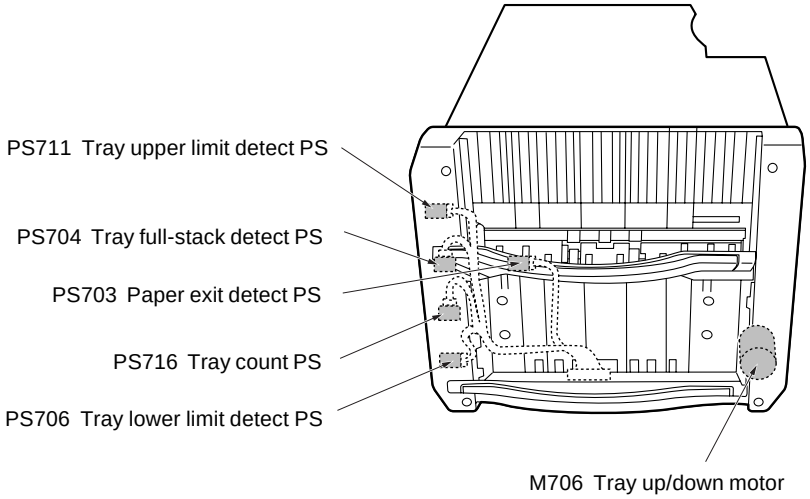


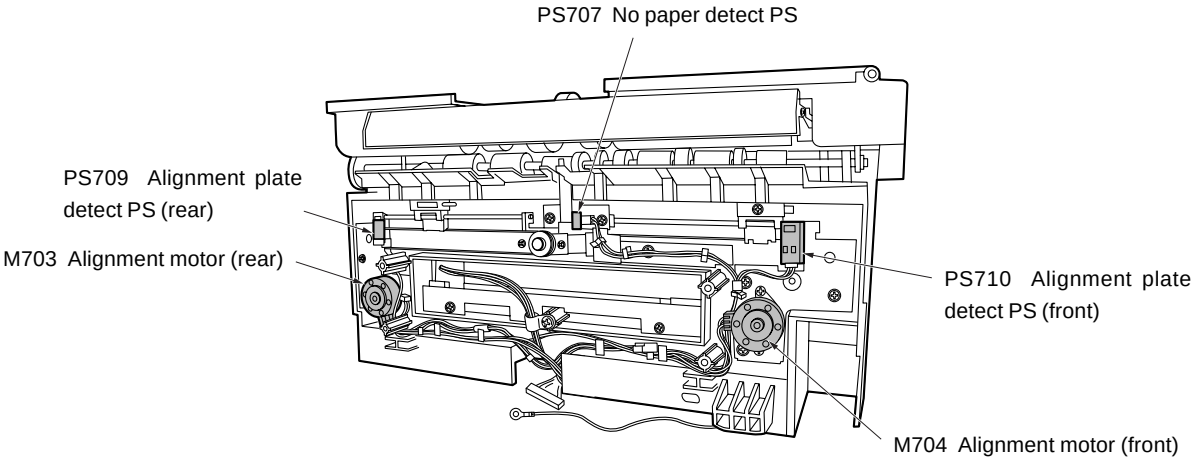
(5) Take out the set screw from the unit saddle, slide out and remove the stapler unit.

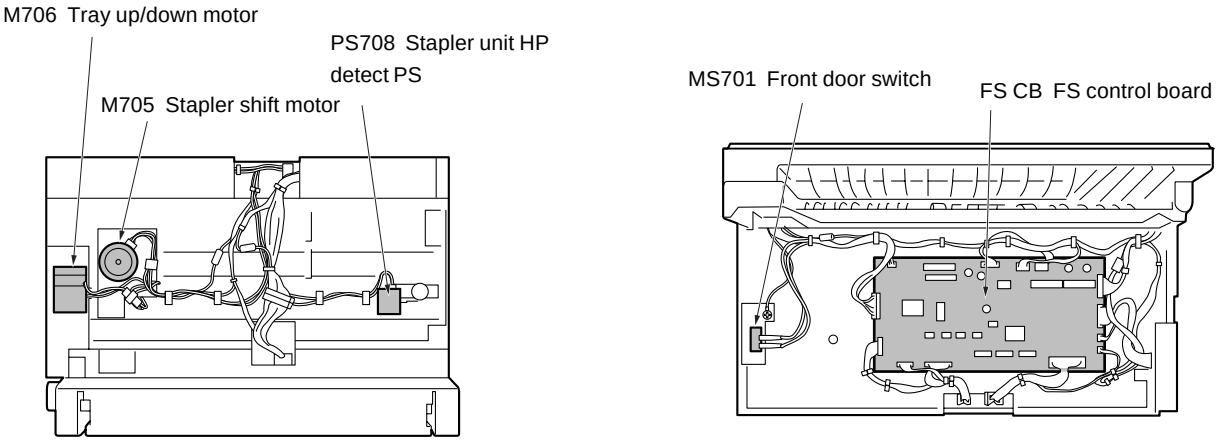


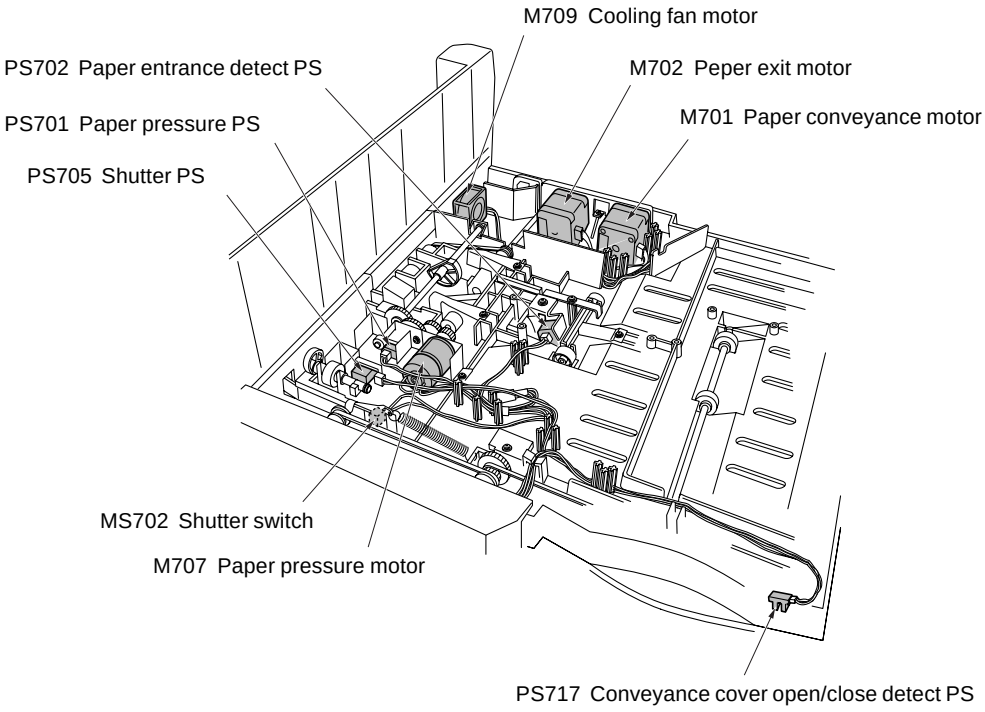
(6) Install by reversing the removal procedure.

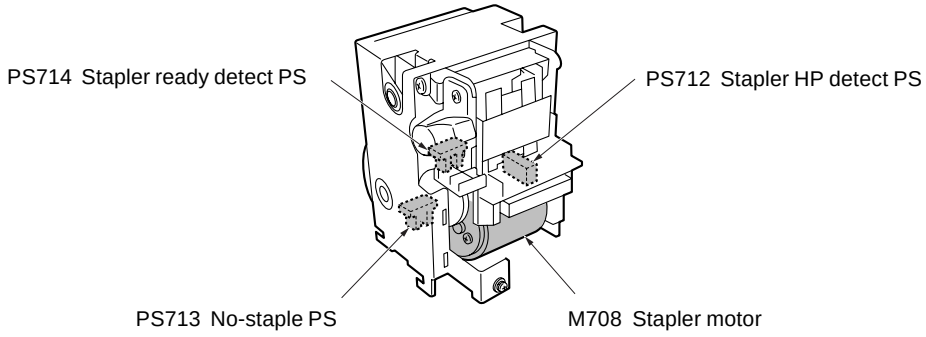
FS-107 ELECTRICAL PARTS LAYOUT DRAWING


PS711 Tray upper limit detect PS
PS704 Tray full-stack detect PS
PS703 Paper exit detect PS
PS716 Tray count PS
PS706 Tray lower limit detect PS
M706 Tray up/down motor

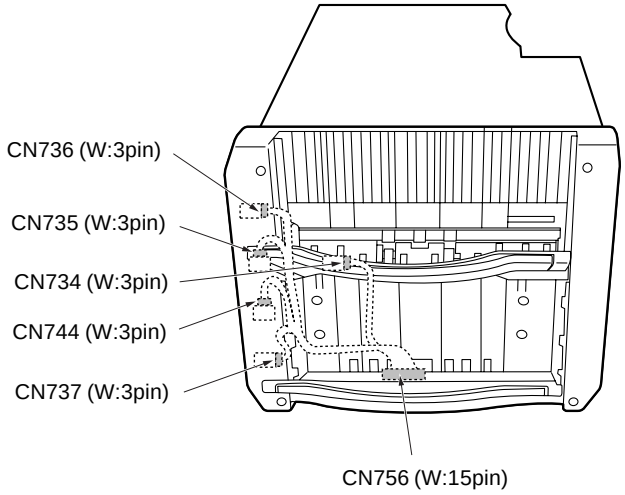

PS707 No paper detect PS
PS709 Alignment plate detect PS (rear)
M703 Alignment motor (rear)
PS710 Alignment plate detect PS (front)
M704 Alignment motor (front)

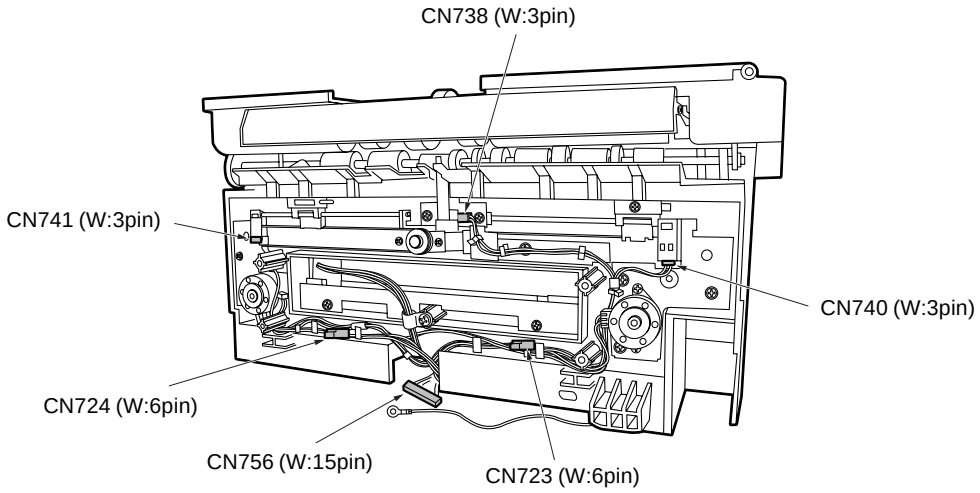

M706 Tray up/down motor
PS708 Stapler unit HP detect PS
M705 Stapler shift motor
MS701 Front door switch
FS CB FS control board

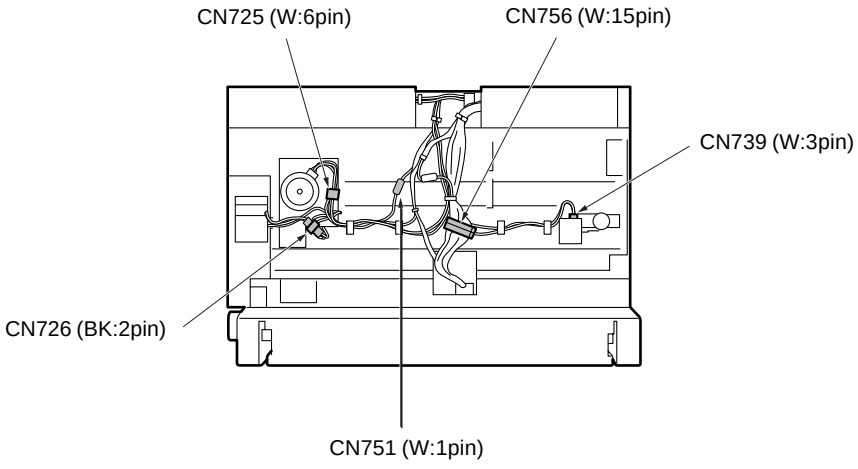

M709 Cooling fan motor
PS702 Paper entrance detect PS
M702 Peper exit motor
PS701 Paper pressure PS
M701 Paper conveyance motor
PS705 Shutter PS
MS702 Shutter switch
M707 Paper pressure motor
PS717 Conveyance cover open/close detect PS

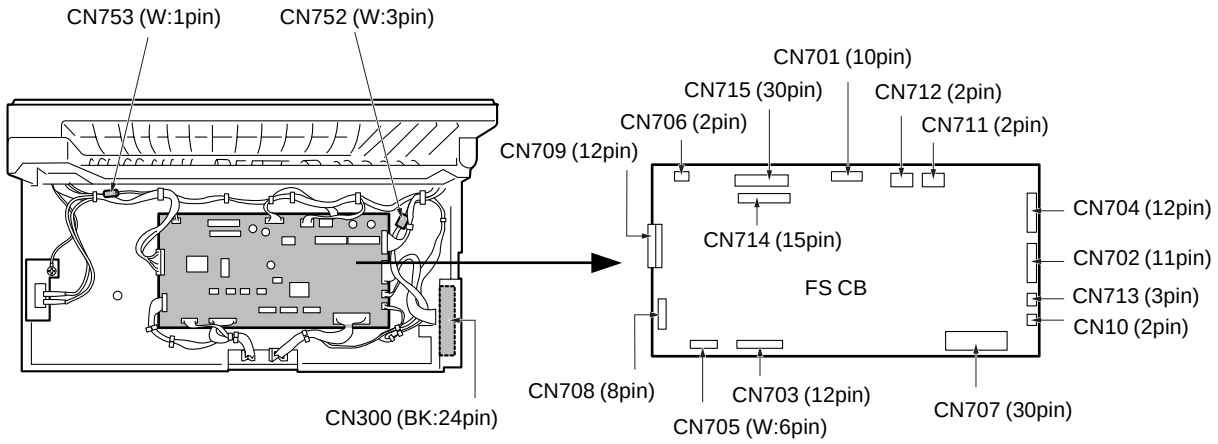

PS714 Stapler ready detect PS
PS712 Stapler HP detect PS
PS713 No-staple PS
M708 Stapler motor

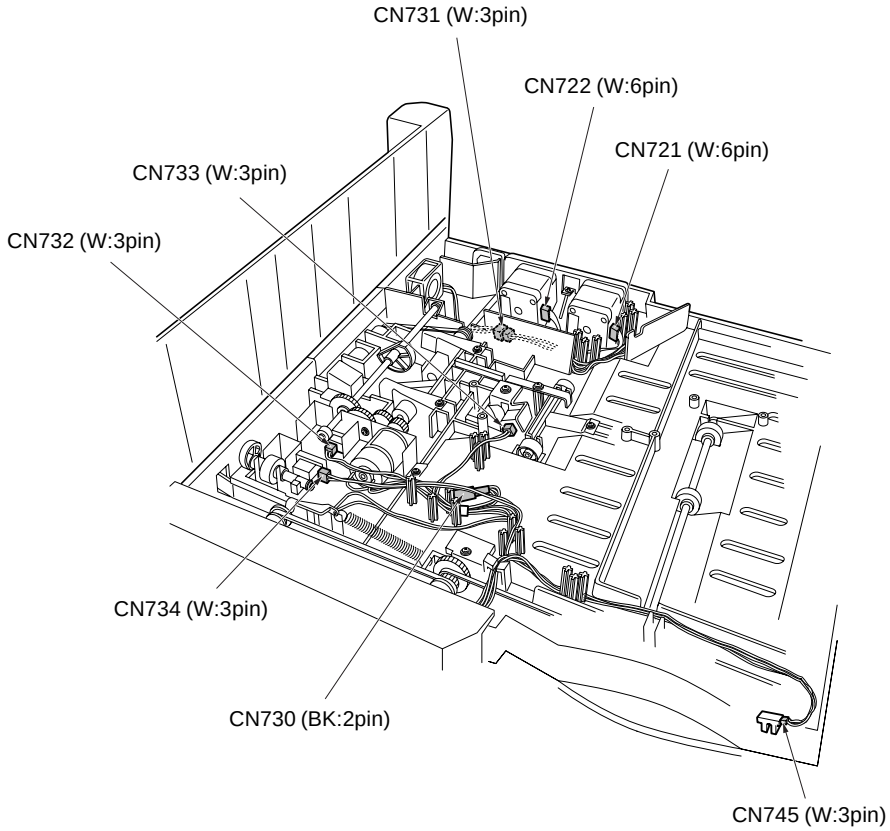
FS-107 CONNECTOR LAYOUT DRAWING



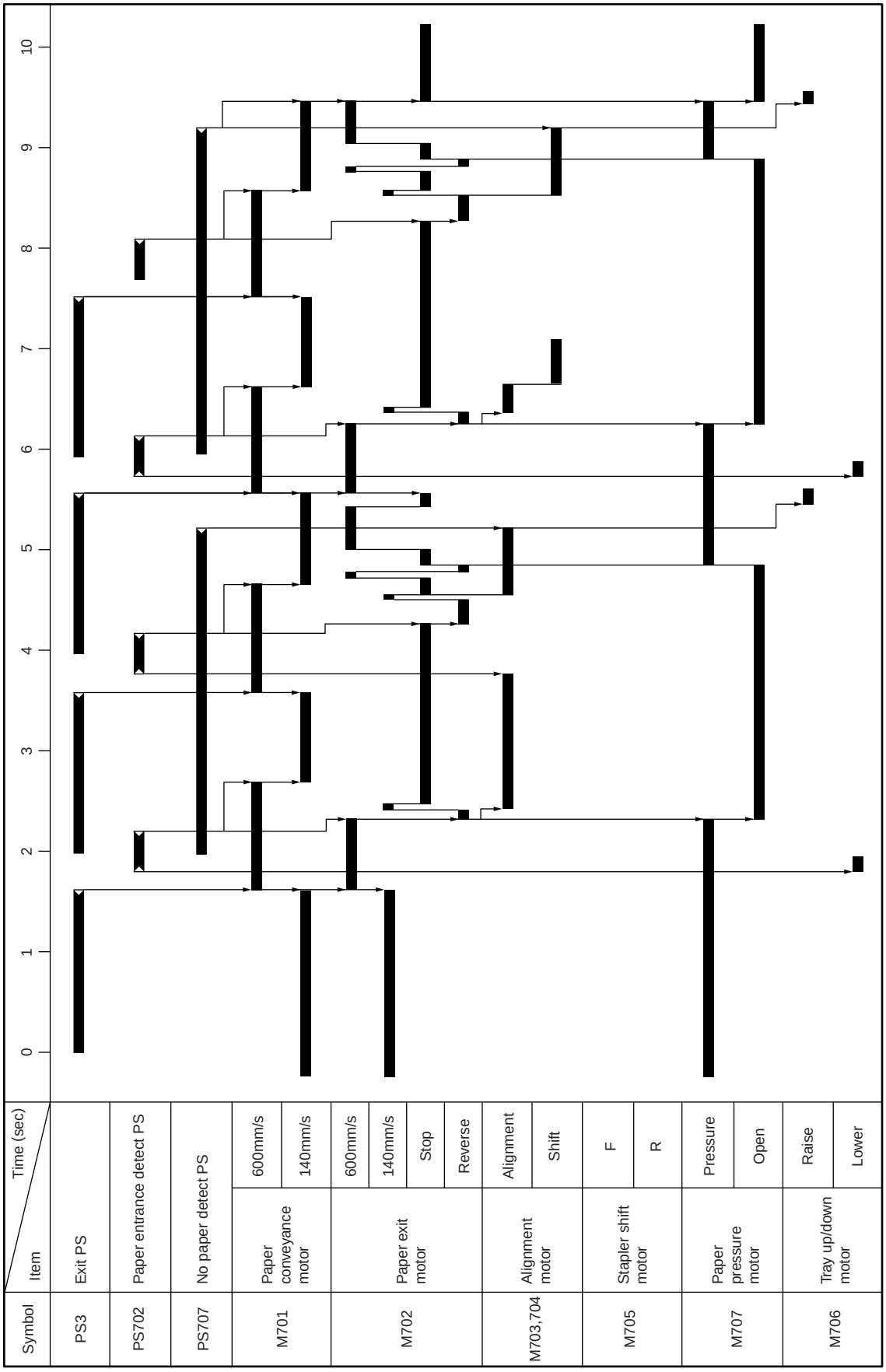





CN753 (W:1pin)
CN752 (W:3pin)
CN701 (10pin)
CN715 (30pin)
CN712 (2pin)
CN706 (2pin)
CN711 (2pin)
CN709 (12pin)
CN704 (12pin)
CN714 (15pin)
CN702 (11pin)
FS CB
CN713 (3pin)
CN10 (2pin)
CN708 (8pin)
CN703 (12pin)
CN707 (30pin)
CN705 (W:6pin)
CN300 (BK:24pin)

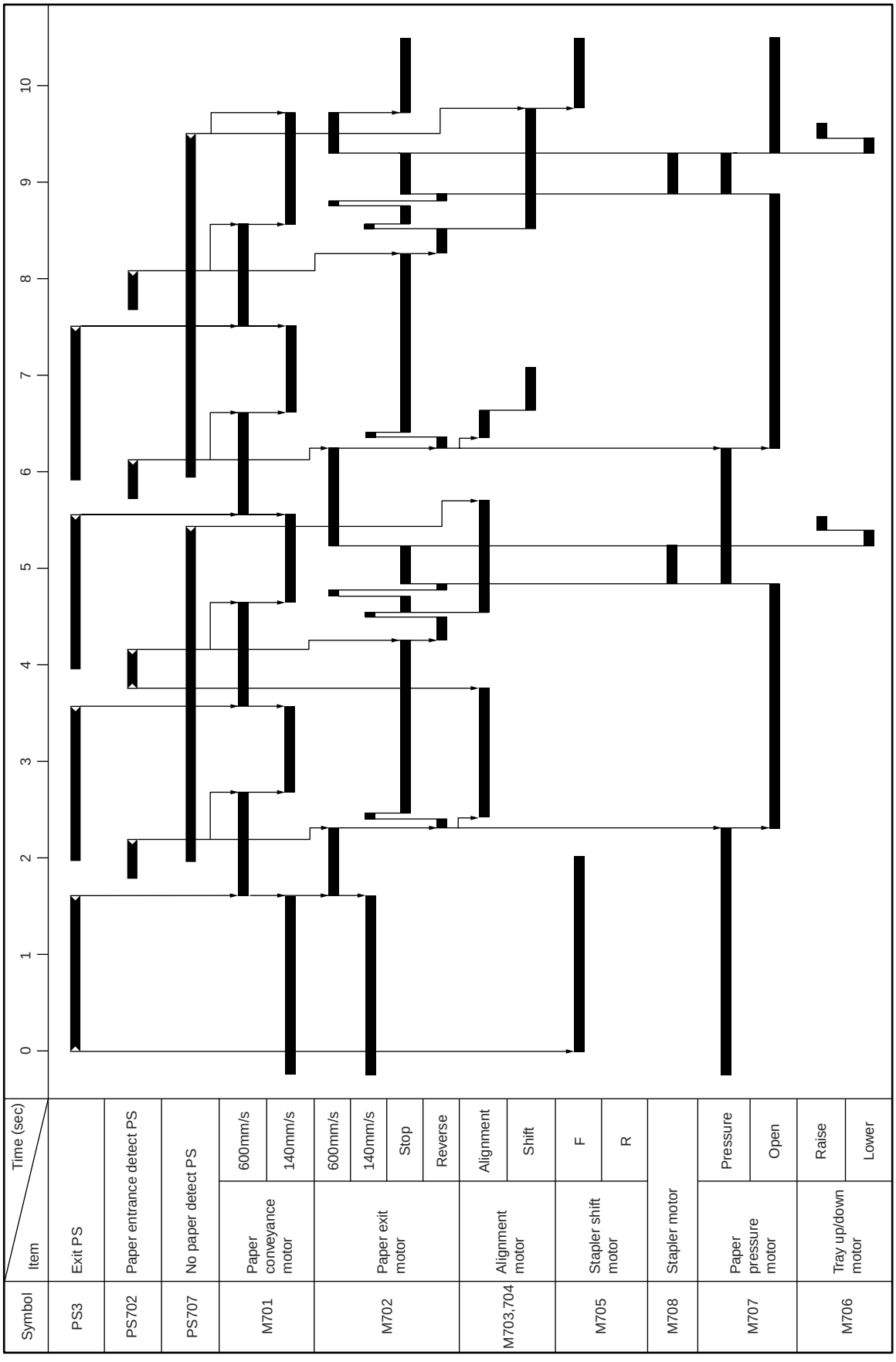

CN731 (W:3pin)
CN722 (W:6pin)
CN721 (W:6pin)
CN733 (W:3pin)
CN732 (W:3pin)
CN734 (W:3pin)
CN730 (BK:2pin)
CN745 (W:3pin)

TIME CHART (8.5X11, SORT MODE, 2 SHEETS/SET, 2 SETS)



Symbol	Item \ Time (sec)	
PS3	Exit PS	
PS702	Paper entrance detect PS	
PS707	No paper detect PS	
M701	Paper conveyance motor	600mm/s
		140mm/s
M702	Paper exit motor	600mm/s
		140mm/s
		Stop
		Reverse
M703,704	Alignment motor	Alignment
		Shift
M705	Stapler shift motor	F
		R
M707	Paper pressure motor	Pressure
		Open
M706	Tray up/down motor	Raise
		Lower

TIME CHART (8.5X11, STAPLE MODE, 2 SHEETS, 1 POSITION)



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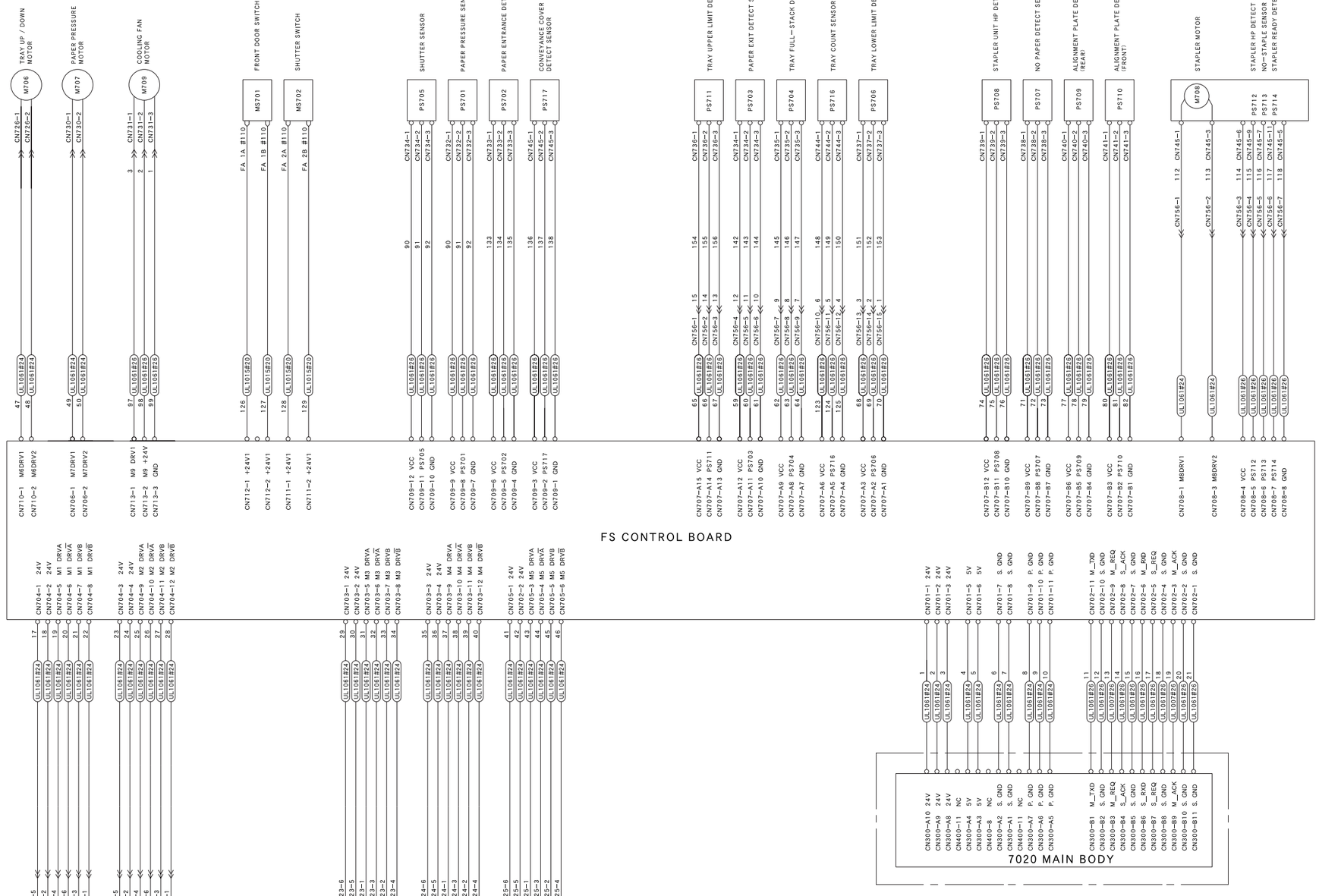
FS-107 OVERALL WIRING DIAGRAM



[HOW to see the diagram]

1. The signals shown reflect levels present under normal idling conditions with the main switch turned ON.
2. Wiring symbols in the figure are as follows.
   1) ~~@—@~~ is Connector
   2) (RC) @is ribbon cable
   3. Signal symbols in the figure are as follows .

H	High active
L	Low active
*	Analog signal
P	Pulse signal

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Konica

PARTS CATALOG

Model
FS-107

SEPTEMBER 2002
THIRD EDITION

KONICA BUSINESS TECHNOLOGIES, INC.

This parts catalog includes illustrations and part numbers for all replacement parts and assemblies used in this model.

Model-specific parts are identified in the illustrations with reference numbers. Use the reference number to locate the corresponding part number on the facing page.

Common hardware items, such as screws, nuts, washers, and pins, are identified in the illustrations with reference letters. Use the reference letter to locate the corresponding part number on the hardware listing in the lower right hand corner of the facing page.

If you know a part number, but don't know where the part is used, use the numerical index to determine the page number and reference number for that part. Because some common parts are used in several places, there may be more than one entry. Refer to the illustrations to see where the part may be used.

If you know a part's description, but don't know where to look to find the part number, use the alphabetical index to determine likely page and reference numbers. Then look at the illustrations to determine that you have identified the correct part. Locate the part number using the listing on the opposite page.

Retail pricing that appears with the numerical index, while valid when this catalog was printed, is subject to change without notice. The prices are only suggested prices and are provided only for reference. Dealers may determine their own selling prices. For up-to-date pricing, refer to current Konica price lists or contact the Konica Parts Distribution Center.

How to order parts

Use standard Konica parts ordering procedures to obtain these parts. For ordering options, contact Konica's Parts Distribution Center.

When ordering parts, be sure to specify part numbers exactly as listed in this catalog.

NOTE: Electrical parts may include previously used components.

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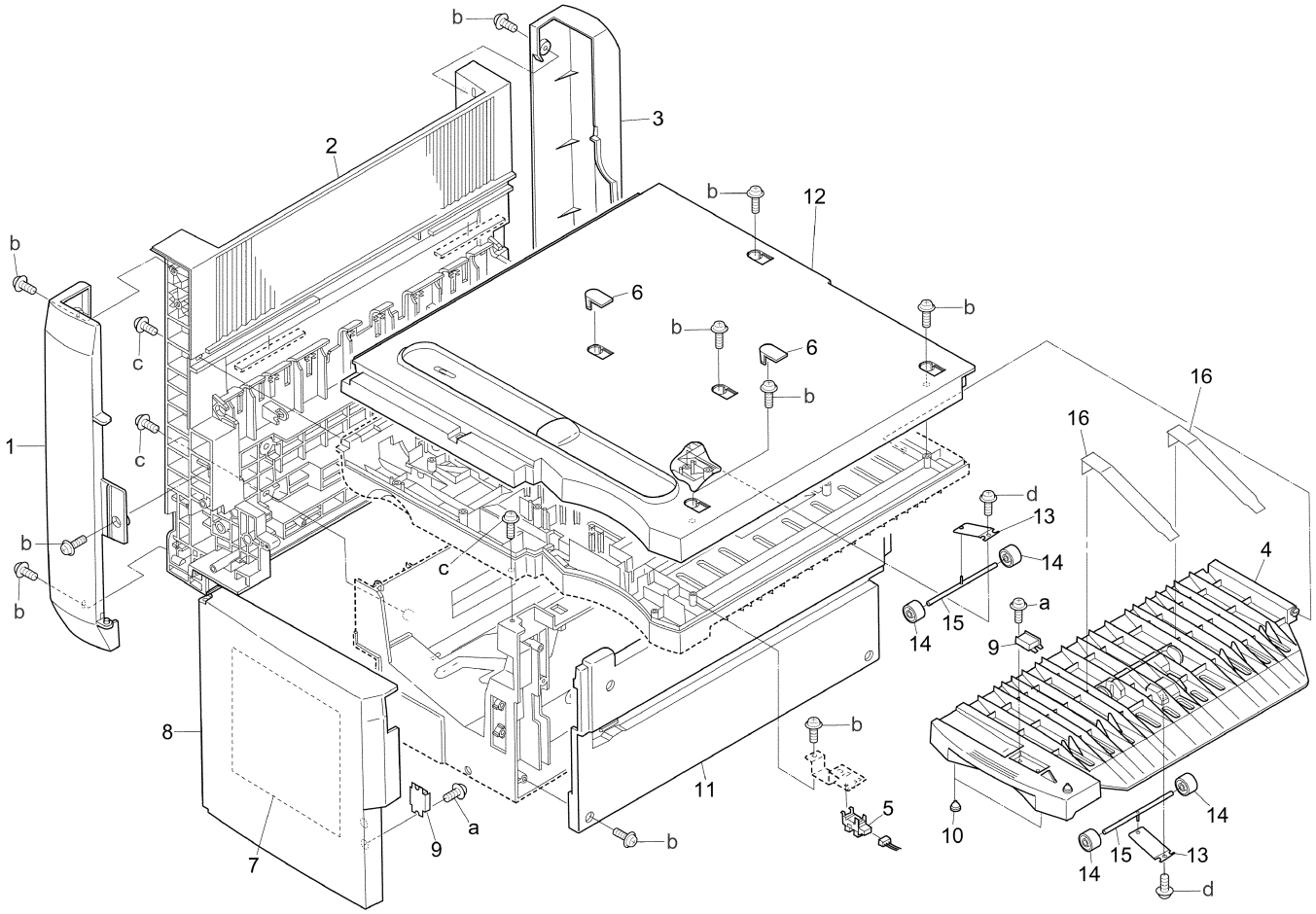
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REF. NO.	PART NUMBER	DESCRIPTION
1	13GQ12040	Paper exit cover/front
2	13GQ10022	Main casing/2
3	13GQ12050	Paper exit cover/rear
4	13GQ45021	Conveyance open-close plate
5	12QV85510	Photosensor
6	13GQ12100	Screw cover
7	13GQ97020	Staple label
8	13GQ12010	Open-close cover
9	12AA12100	Magnet catch/A
10	048645260	Stopper rubber
11	13GQ12020	Side cover
12	13GQ12091	External upper plate
13	13GQ45210	Conveyance pressure spring/A
14	13GQ45860	Conveyance driven roller/B
15	13GQ-4690	Conveyance driven shaft/A assembly
16	13GQ45940	Conveyance guide sheet/A

HARDWARE

REF. LTR.	PART NUMBER
a	00Z373082
b	00Z353102
c	00Z354122
d	00Z353081

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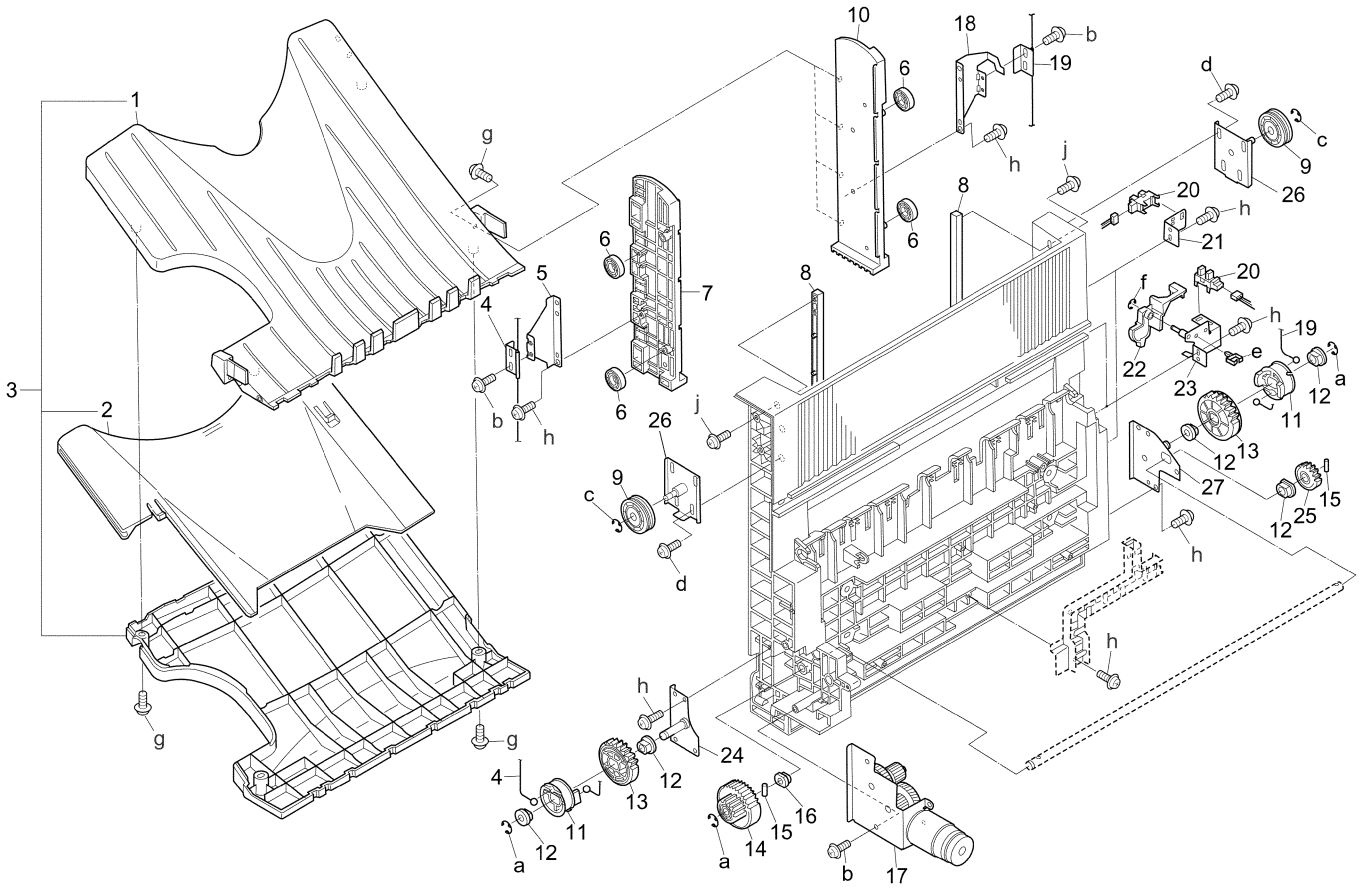
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REF. NO.	PART NUMBER	DESCRIPTION
1	13GQ48010	Paper exit tray/A
2	13GQ48020	Paper exit tray/B
3	13GQ-4910	Paper exit tray/lower assembly
4	13GQ15091	Up-down wire/front
5	13GQ48310	Support plate/front
6	13GQ48080	Up-down roller
7	13GQ48050	Up-down plate/front
8	13GQ48152	Guide part
9	13GQ48300	Tension pulley
10	13GQ48060	Up-down plate/rear
11	13GQ48070	Up-down pulley
12	090075530	Bearing
13	13GQ77130	Rocking gear/D (Z=30)
14	13GQ77120	Rocking gear/C (Z=15/45)
15	300078010	Pin A
16	13GQ76030	Shaft holder/B
17	13GQ80020	FNS driving motor
18	13GQ48320	Support plate/rear
19	13GQ15101	Up-down wire/rear
20	12QV85510	Photosensor
21	13GQ48180	Mount plate/C
22	13GQ48200	Paper exit standard actuator
23	13GQ-4830	Mount plate/D assembly
24	13GQ-1520	Drive Mount plate/C assembly
25	13GQ77140	Rocking gear/E (Z=15)
26	13GQ-1540	Tension plate/A assembly
27	13GQ-1510	Drive Mount plate/B assembly

HARDWARE

REF. LTR.	PART NUMBER
a	00Z670606
b	00Z163061
c	00Z670406
d	00Z254081
e	00Z921930
f	00Z670306
g	00Z353102
h	00Z353081
j	00Z353101

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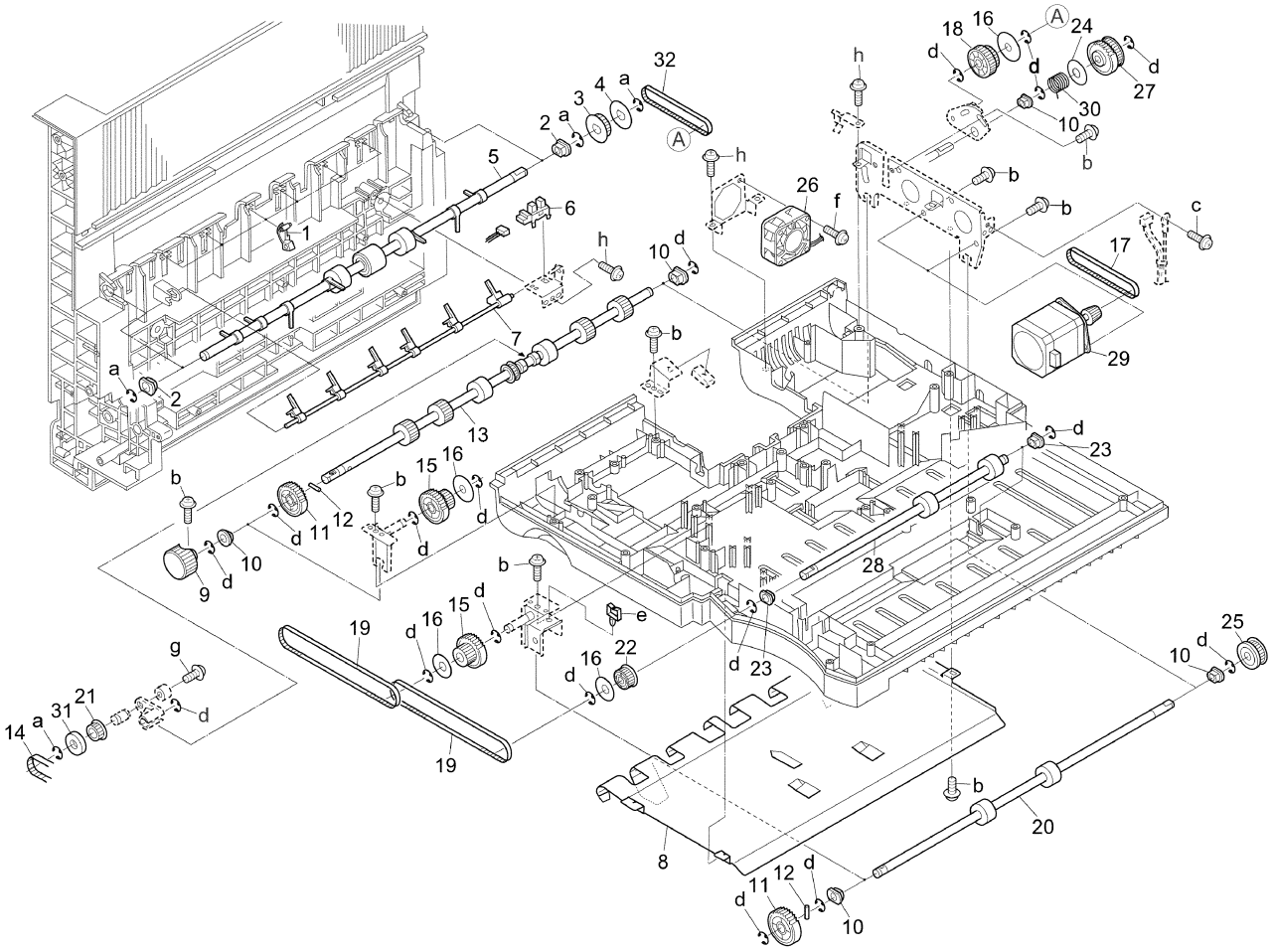
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REF. NO.	PART NUMBER	DESCRIPTION
1	13GQ48250	Positioning actuator/B
2	13GQ76040	Shaft holder/C
3	13GQ76560	Paper exit pulley (Z=22)
4	13GQ48230	Collar/C
5	13GQ48221	Paper exit driving roller/B
6	12QV85510	Photosensor
7	13GQ48260	Detecting part
8	13GQ-4530	Conveyance guide plate/A assembly
9	13GQ45470	Rotary knob
10	322076010	Paper lift-up lever shaft holder
11	13GQ77040	Conveyance driving gear/1 (Z=28)
12	466078010	Pin A
13	13GQ45150	Conveyance driving roller/C
14	13GQ77581	Driving belt/H (L=92)
15	13GQ77020	Conveyance idler gear/1 (Z=18/28)
16	13GQ45480	Collar/A
17	13GQ77540	Driving belt/D (L=129)
18	13GQ77030	Paper exit idler gear (Z=22/33)
19	13GQ77560	Driving belt/F (L=309)
20	13GQ45070	Conveyance driving roller/B
21	13GQ76590	Conveyance auxiliary pulley (Z=22)
22	13GQ76540	Conveyance driving pulley/B (Z-18)
23	13GQ76020	Shaft holder/A
24	13GQ45870	Spring spacer
25	13GQ76580	Conveyance driving pulley/A (Z=24)
26	13GQ80510	Cooling fan motor
27	13GQ77181	Paper exit connecting clutch (Z=28/36)
28	13GQ45060	Conveyance driving roller/A
29	13GQ-4340	FNS motor/Assembly
30	13GQ45620	Hold spring
31	13GQ45820	Conveyance auxiliary roller
32	13GQ77570	Driving belt/G (L=207)

HARDWARE

REF. LTR.	PART NUMBER
a	00Z670606
b	00Z193061
c	00Z163061
d	00Z670406
e	00Z921301
f	00Z183251
g	00Z193161
h	00Z353081

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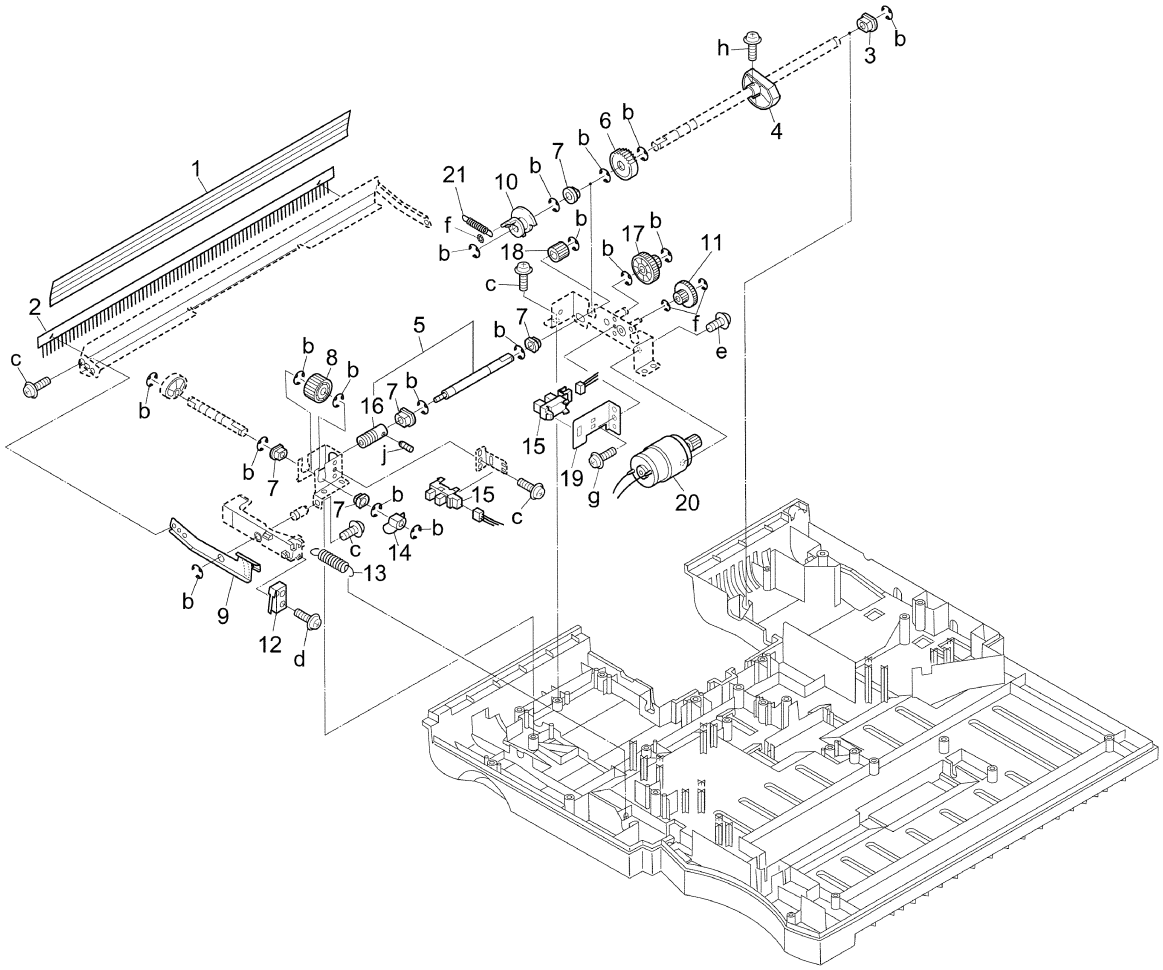
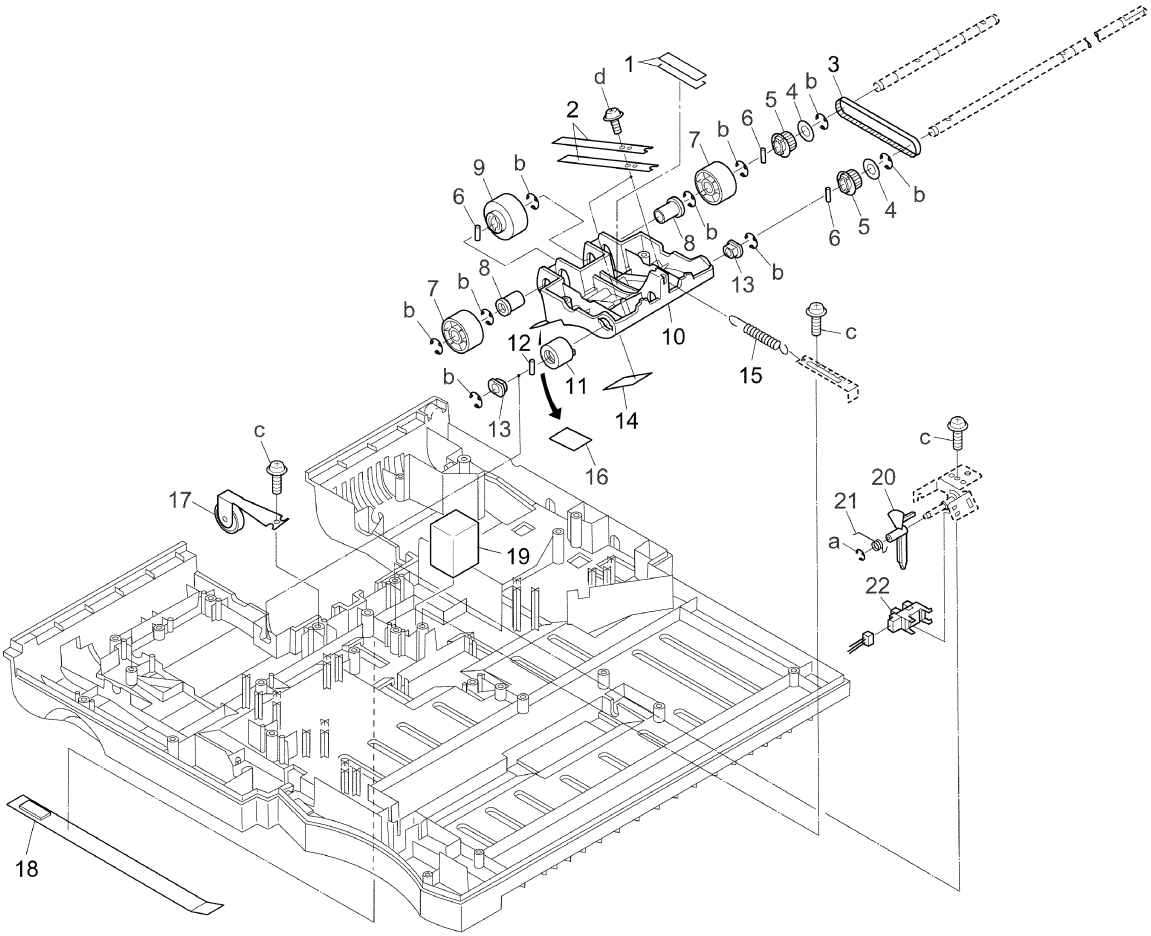


REF. NO.	PART NUMBER	DESCRIPTION
1	13GQ45681	Neutralizing cover
2	13GQ45580	Neutralizing brush
3	13GQ76020	Shaft holder/A
4	13GQ45410	Pressure cam
5	13GQ-4320	Connecting shaft assembly
6	13GQ77090	Rocking gear/A (Z=48)
7	322076010	Paper lift-up lever shaft holder
8	13GQ77230	Rocking gear/C (Z=30)
9	13GQ45690	Detecting arm
10	13GQ45421	Positioning actuator/A
11	13GQ77070	Rocking idler/1 (Z=20/40)
12	12QR86010	Inter lock switch
13	13GQ45780	Detecting spring
14	13GQ45750	Rocking actuator
15	12QV85510	Photosensor
16	55GA77670	Toner supply worm
17	13GQ77080	Rocking idler/2 (Z=20/48)
18	13GQ77220	Rocking gear/B (Z=20)
19	13GQ45761	Mount plate/G
20	13GQ80051	FNS motor/3
21	13GQ45931	Cam positioning spring/D

HARDWARE

REF. LTR.	PART NUMBER
b	00Z670406
c	00Z193041
d	00Z252121
e	00Z182641
f	00Z660206
g	00Z163041
h	00Z183081
j	00Z473043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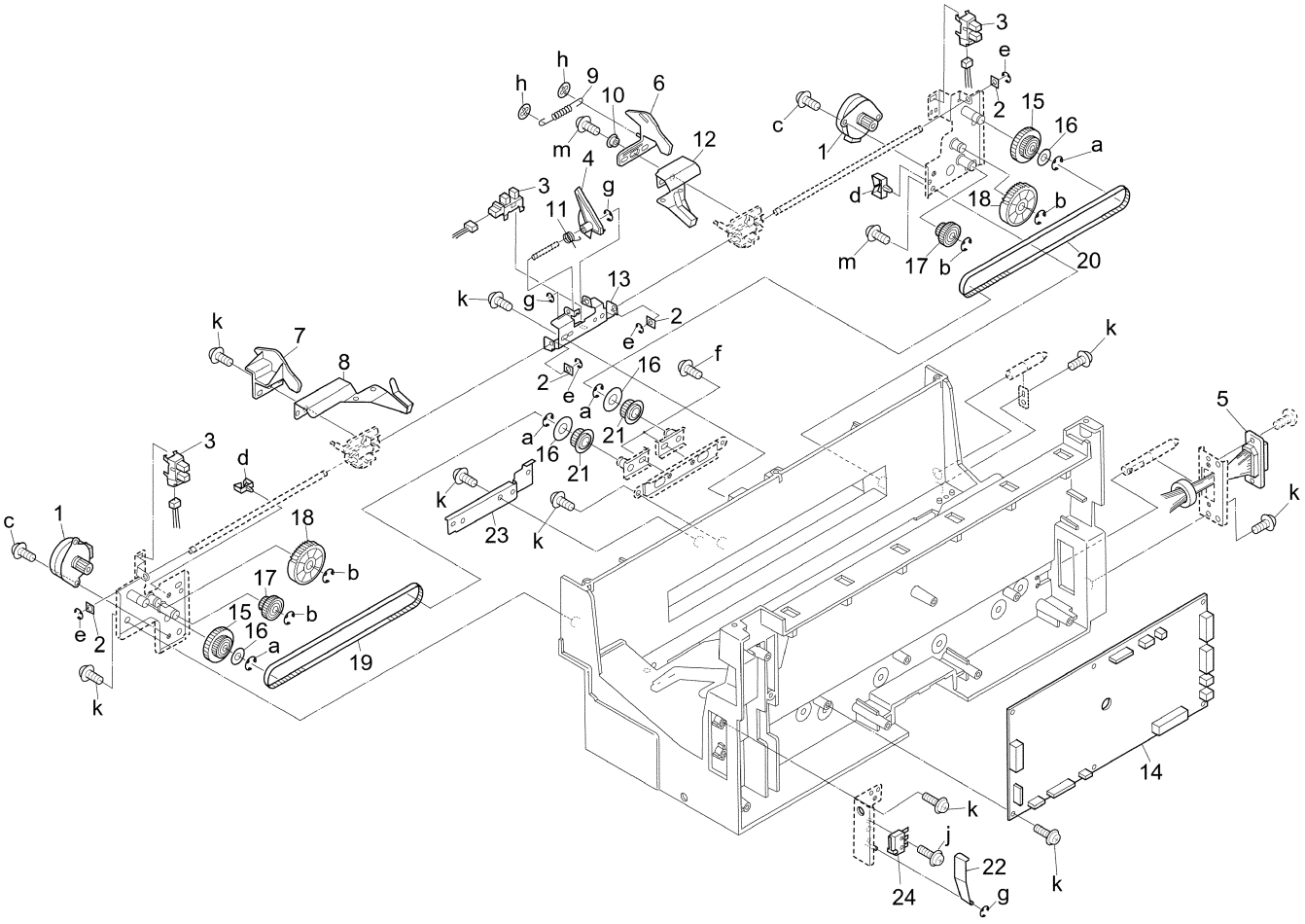
REF. NO.	PART NUMBER	DESCRIPTION
1	13GQ98040	Cam auxiliary sheet
2	13GQ45430	Paper exit pressure spring
3	13GQ77550	Driving belt/E (L=195)
4	13GQ45490	Collar/B
5	13GQ76550	Paper exit driving pulley/A (Z=12)
6	466078010	Pin A
7	13GQ45090	Paper exit driven roller/A
8	13GQ76010	Paper exit shaft holder
9	13GQ45191	Paper exit driving roller/A
10	13GQ45050	Conveyance rocking plate
11	13GQ45511	Toque limiter
12	454078050	Pin (Cleaner A)
13	13GQ76020	Shaft holder/A
14	13GQ45600	Conveyance auxiliary sheet/A
15	13GQ45450	Adjusting spring
16	13GQ45610	Conveyance auxiliary sheet/B
17	13GQ-4730	Conveyance pressure spring/B assembly
18	13GQ-4700	Conveyance auxiliary sheet/F assembly
19	13GQ45910	Finisher cushion
20	12QR86010	Interlock switch
21	13GQ45301	Spring
21	13GQ45300	Spring
22	12QV85510	Photosensor

HARDWARE

REF. LTR.	PART NUMBER
a	00Z670206
b	00Z670406
c	00Z193041
d	00Z353081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REF. NO.	PART NUMBER	DESCRIPTION
1	13GQ80011	FNS collect motor
2	25AA52090	Stopper sheet
3	12QV85510	Photosensor
4	13GQ60171	Paper detecting actuator
5	13GQ90011	FNS I/F wiring
6	13GQ-6080	Paper regulating plate/rear assembly
7	13GQ60010	Paper regulating plate/front
8	13GQ-6151	Paper positioning plate/front
9	13GQ60051	Paper regulating spring
10	13GQ60220	Paper regulating collar
11	13GQ60211	Detecting spring
12	13GQ-6141	Paper positioning plate/rear assembly
13	13GQ60191	Paper detecting board
14	13GQ-9018	FNS control unit
15	13GQ77010	Regulating gear (Z=28/55)
16	25AA52140	Belt holder/B
17	13GQ77190	Regulating gear/B (Z=22/37)
18	13GQ77160	Regulating idler (Z=64)
19	13GQ77510	Driving belt/A (L=380)
20	13GQ77520	Driving belt/B (L=406)
21	13GQ76510	Idler pulley (Z=28)
22	13GQ10170	Switch plate
23	13GQ60251	Wiring fixed plate
24	12QR86010	Interlock switch

HARDWARE

REF. LTR.	PART NUMBER
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b	00Z670406
c	00Z183061
d	00Z921931
e	00Z670306
f	00Z163061
g	00Z670206
h	00Z660206
j	00Z182081
k	00Z353081
m	00Z353101

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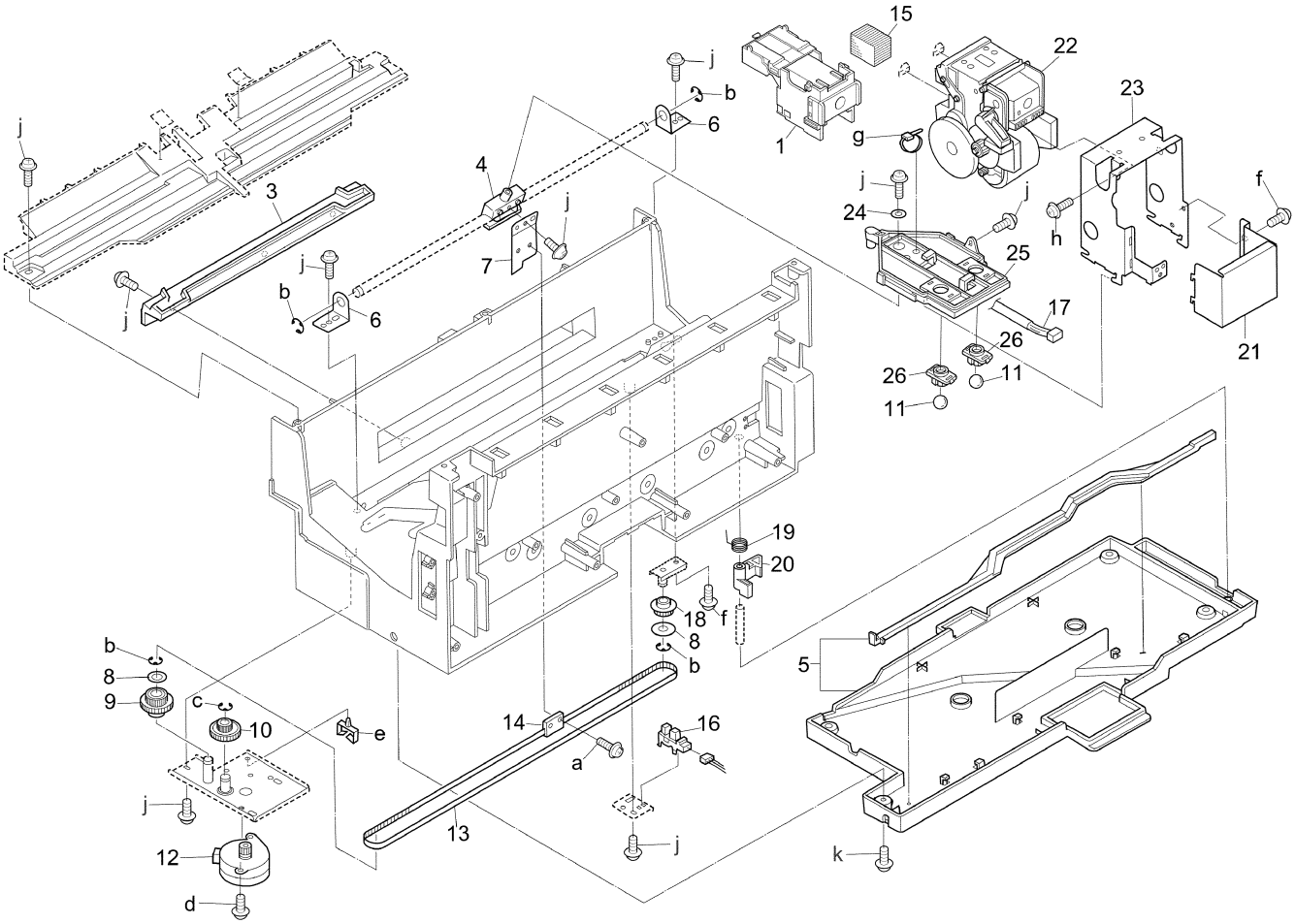
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j
13
j
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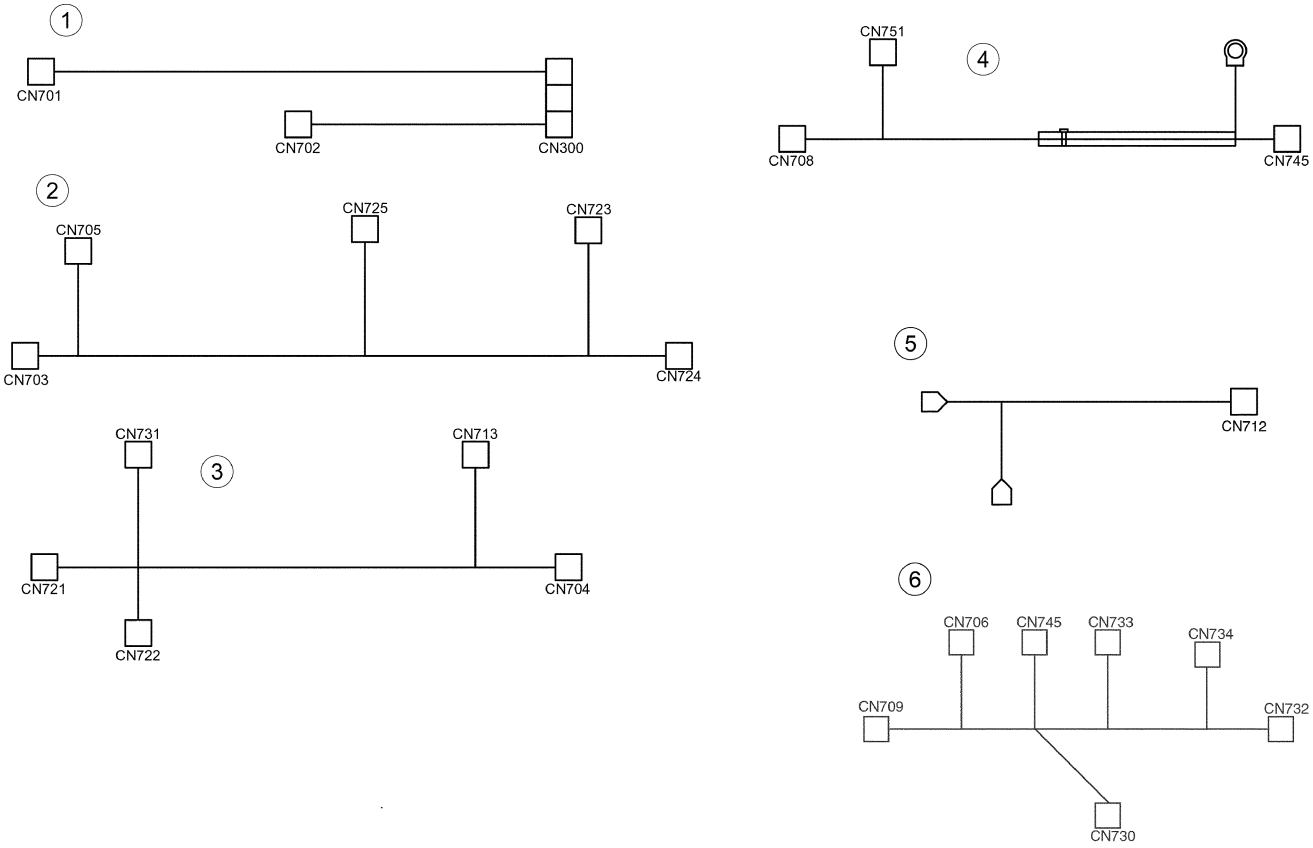
d
k

REF. NO.	PART NUMBER	DESCRIPTION
1	120HK0010	Cartridge case
2	*	Not used
3	13GQ50090	Oscillate cam
4	13GQ50080	Slide plate
5	13GQ-1220	Cover/Lower assembly
6	13GQ50051	Fixed plate
7	13GQ50070	Driving plate
8	25AA52140	Belt holder/B
9	13GQ77210	Staple driving gear (Z=19/55)
10	12QR77010	Staple driving gear (Z=28/55)
11	13GQ50170	Click part
12	13GQ80031	FNS motor/1
13	13GQ77530	Driving belt/C (L=741)
14	13GQ50230	Fixed block
15	12QRK0011	Staples
16	12QV85510	Photosensor
17	13GQ90101	Relay wiring/2
18	13GQ76570	Idler pulley/2 (Z=19)
19	13GQ10140	Main lock spring
20	13GQ10120	Main lock claw
21	13GQ50120	Wiring cover
22	120H50402	Staple
23	13GQ50110	Staple mount plate
24	13GQ50180	Oscillate collar
25	13GQ50100	Staple board
26	13GQ50271	Fixed part

HARDWARE

REF. LTR.	PART NUMBER
a	00Z193061
b	00Z670606
c	00Z670406
d	00Z183061
e	00Z921931
f	00Z163061
g	00Z922410
h	00Z194041
j	00Z353081
k	00Z353102

Wiring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CN751
CN708
CN745
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CN712
6
CN706
CN745
CN733
CN734
CN709
CN732
CN730

REF. NO.	PART NUMBER	DESCRIPTION
1	13GQ90011	FNS I/F wiring
2	13GQ90021	Motor wiring/1
3	13GQ90031	Motor wiring/2
3	13GQ90030	Motor wiring/2
4	13GQ90101	Relay wiring/2
5	13GQ90110	Interlock wiring/1
6	13GQ90061	Sensor wiring/1

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Conveyance auxiliary roller	7	31
Conveyance auxiliary sheet/A	11	14
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